December 15, 2012

Nutrient Reduction Strategy

ANR Program Services

2101 Agronomy Hall

Ames, Iowa 50011-1010

DEC 17 2012

It is hard to understand why the plan fails to address the nutrients introduced to the lakes and rivers coming from the above ground inlets to the agricultural drainage tile systems.

Failure to address that source seem to miss an opportunity which has been addressed by Minnesota with a program which inexpensive, popular with the farmers, and in addition to reducing nutrients, also reduces the flash or surge caused by above ground inlets to the agricultural drainage tile system.

I have enclosed copies of information used by Minnesota in implementing the program of substituting below ground inlets for above ground inlets

Richard Ramsay

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Apt. 514

Des Moines, Iowa 50312

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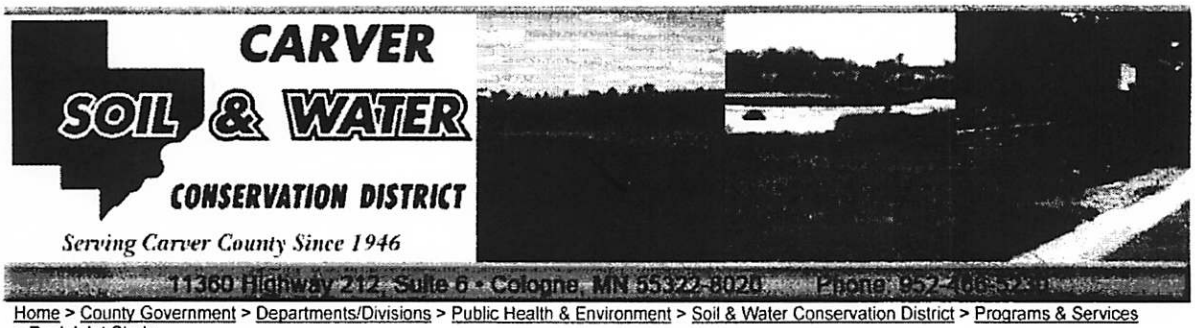
515-661-6579



Rock Inlet Study

Quick Links

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County Code of Ordinances
Environmental Services
Fee-for-Service Schedule
GoCarverGo
Land Title Information (Landshark)
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Property Search (Mapping)
Property Tax Payments
Public Health
Public Health (Salud Pública)
ReadyCarver
Redistricting 2012
Request for Information
Requests for Bids/Proposals
Risk/Emergency Management
Service Centers
Sheriff
Tax Forfeiture
Veterans Services

Contacts

Environmental Services
(952) 361-1800
environment@co.carver.mn.us
Land Management
(952) 361-1820
land@co.carver.mn.us
Planning & Water Management
(952) 361-1625
planning@co.carver.mn.us
Soil & Water Conservation District
(952) 466-5230
Community Development Agency
(952) 448-7715

Rock Inlet Study

This study is funded by the Metropolitan Council. A rock inlet and a conventional surface intake have been installed on a paired watershed to compare drainage capabilities and measure water quality impacts. Several rock inlets are being installed on farms across the county to assess their effectiveness.

The SWCD has installed over 320 rock inlets throughout Carver County. The work is easy and relatively cheap, the average cost of replacing an open inlet with a rock inlet is about $250. We currently have some cost share dollars that could pay up to 75% of the costs, not to exceed $200 per inlet.

A backhoe is used to dig a twelve foot trench that extends away from the open inlet. The stand-pipe is removed and a section of muck pipe with a filter sock is laid down in the trench. Then the entire trench is filled with pea rock.

The rock inlets are popular with landowners because they seem to be constantly draining the sub-surface water. Thus, the area around the rock inlet is able to take on more water during a rain event. Landowners also like the rock inlets because it is much easier to lift equipment over the rock instead of driving around the stand-pipe.

From a conservation point, the rock inlets are saving the amount of sediment and pollutants that get washed down the tile line as a result of heavy rain. To measure the rock inlet effectiveness, we have set up a research site.

The Tile Intake Study Research Site is only in its second year and we already have some good results. The study site has automatic water samplers that grab samples of runoff from farm fields after a rain storm event. One drainage system has a conventional open intake, and the other has a rock inlet that replaces the open inlet.

Our results indicate that nearly three times the amount of total suspended solids and total phosphorus go through the open inlet compared to that of the rock inlet. It is easy to see the large amounts of sediment that a stream or river carries after a rain-storm by looking at how dirty the water looks. We are trying to cut back on the amount of sediment that washes away in a rain event by installing these rock inlets.

To see research information and installation, please CLICK HERE*

For more information about the Rock Inlet Study, contact:
Mike Wanous, District Manager
(952) 466-5230
mwanous@co.carver.mn.us

*This information is available to download in PDF format. The presentation can be viewed using Adobe Acrobat Reader and printed out for use. If you do not have Acrobat Reader already installed, you may download a copy by visiting the Adobe website. Follow the Adobe link for step by step instructions.

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Contact Webmaster

Policies/Disclaimers

Alternative Surface Drainage Systems

There are a variety of Alternative Surface Drainage Systems that may be cost-shared by the Hawk Creek Watershed Project. Any modifications to the following options may be considered by the Hawk Creek Watershed Staff.

Pattern Tile with open Intake Removed
Average Cost – $500
Cost Share 75% not to exceed an amount decided by the Hawk Creek Staff and Local Work Group Technical Committee.

Rock or Blind Intakes
Average Cost - $200 to $450
Cost Share 75% not to exceed an amount decided by the Hawk Creek Staff and Local Work Group Technical Committee.

Hickenbottom Intakes
Average Cost - $200
Cost Share 75% not to exceed $150

Other Tile Intake Protection Ideas will be considered.

You must obtain a 1026 Drainage Modification request form from the County NRCS office before installation.

Call Today!!
Hawk Creek Watershed Project.....(320) 523-3666
Chippewa County SWCD/NRCS office....(320) 269-2139 ext #3
Kandiyohi County SWCD/NRCS office...(320) 235-3906 ext #3
Renville County SWCD/NRCS office.....(320) 523-1559

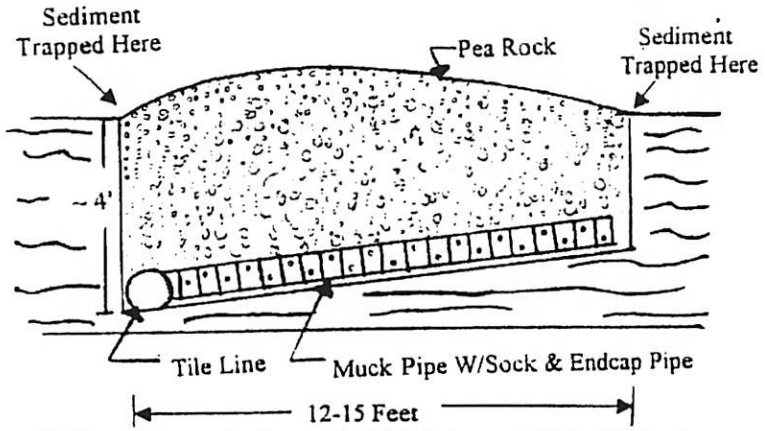
Tile Intake Study

T. Gieske 10/ 97 (Carver SWCD)

Rock Inlet Design and Specifications

Materials

Rock Inlet Design and Specifications



5" diameter muck pipe with 5/8" holes and "Big O" Sock.

- T-Connector, 5" to size of existing tile.
- 4 cubic yards of Pea Rock 1/4"-7/8" diameter.

Earth Work

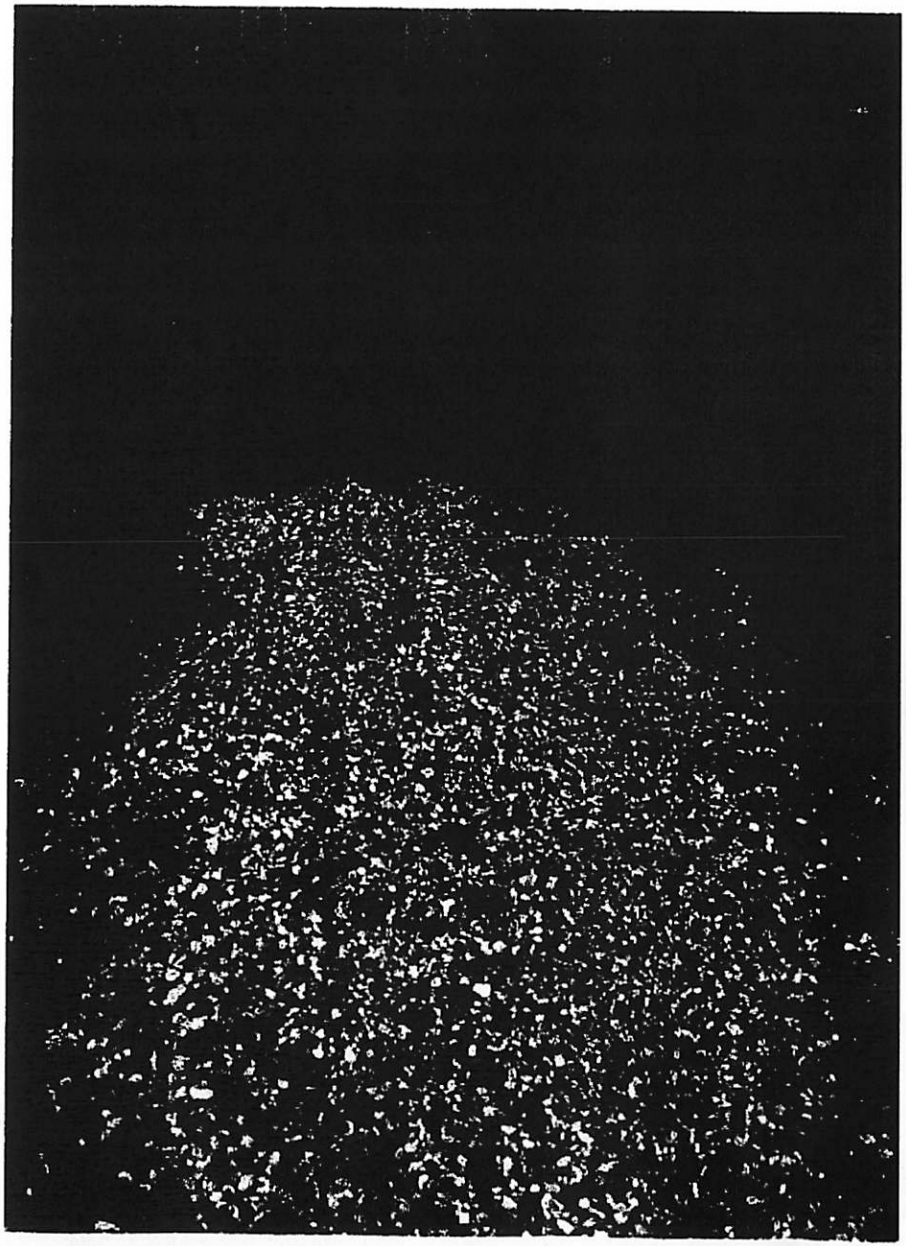
- Excavate 2'-3' Wide x 12' Long x 3'-4' Deep (Depending upon the depth of exsisting tile line.)

Note

- Pea rock should be mounded one foot above grade.
- Using larger rock may allow sediment into structure.
- Cost varies depending upon the number installed.
- Any modification to this design will be considered, but must be approved by the Hawk Creek Local Work Group.

Rock Inlet Cost Share — 75% up to $500.

To Replace Tile Intakes



Alternative Tile Intakes

www.DouglasSWCD.com

What is an alternative tile intake?

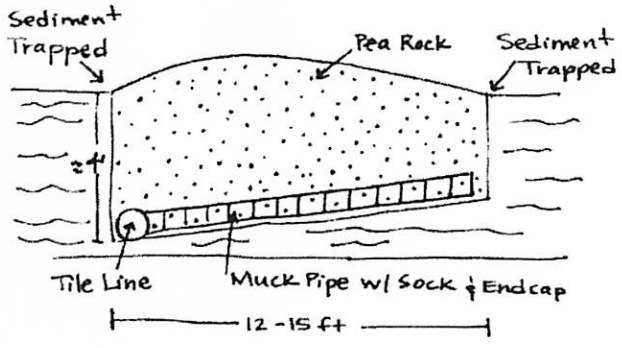
Alternative tile intakes, such as rock inlets, replace open tile inlets with a rock filled trench. This design offers farmers the convenience of no longer having to worry about running over the open inlet with heavy equipment and causing damage to the system. In addition, alternative tile intakes are a step towards improving water quality. Monitoring done in Carver SWCD demonstrates that rock inlets deliver 15-20% less sediment to streams and ditches during runoff events. Rock inlets should be coupled with residue management and other best management practices for optimal effectiveness and longevity.

Why use rock inlets or other alternative tile intakes?

- Excess surface water is removed as effectively as open inlets
- Less sediment is delivered in to the subsurface tile system
- Producers can plant through the rock inlet area without harm to equipment
- Subsurface drainage is increased in the area around the inlet
- Freeze up time is shorter
- Suction voids do not form around rock inlets
- Allows for venting of the subsurface drainage system

Cost Share is available!

Funds are available provide cost share assistance to replace open tile inlets with rock inlets. Landowners or operators are eligible to receive 75% cost share not to exceed $375.00 per intake. Those operating in the Chippewa River Watershed are also eligible for $100 per intake incentive payment through a Clean Water Legacy grant. Stop by the Douglas SWCD to apply before you begin work.



Rock Inlet Specifications

Materials:

- 5" diameter muck pipe with 5/8" holes and "Big O" sock
- T-Connector, 5" to size of existing tile
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Notes:

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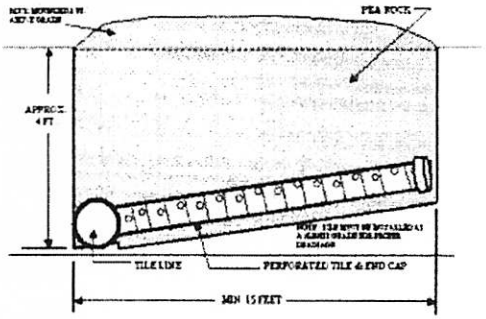
Source: T. Gieske 10/97 (Carver SWCD), adapted from Morriem Drainage, Freeborn Co.

ALTERNATIVE TILE INTAKE (ROCK INLET) COST-SHARE PROGRAM CONTINUATION



Project goal: The goal of this project is to reduce sediment and phosphorus amounts entering open tile intakes by replacement with subsurface intakes. This grant provides 75% cost-share not to exceed $300.00 per intake; requests for greater than $300.00 would be approved by the HLWD or respective SWCD board on a case by case basis. Alternative tile intakes have been shown to reduce sediment and phosphorus delivery up to 50% as compared to an open tile intake.

- Funded through the Clean Water Partnership grant program administered by the MPCA
- Timeframe – September 6, 2010 to June 30, 2013
- Grant funds - $36,000.00
- Inkind match (HLWD and partners) - $46,800.00
- Total project cost - $82,800.00

Rock Inlet Survey

In the spring of 2010, HLWD conducted a mail survey with the participants of the rock inlet program. These surveys were an excellent way for watershed residents to provide feedback about rock inlet installation, performance in various field conditions, and the level of satisfaction with the practice and the program requirements. HLWD was pleased to have a 85% response rate with the producers giving many positive comments about the rock inlet program. To view the rock inlet survey results, please click here.

Alternative Tile Intake (Rock Inlet) Cost-share Program Continuation

Cooperator's Review and Approval Statement
Cost-Share Assistance Agreement
Alternative Tile Intake Flyer
Design and Diagram

Alternative Tile Intake - 2011 Final Report
Alternative Tile Intake - 2011 Annual Financial Report
Alternative Tile Intake Continuation - 2010 Annual Report
Alternative Tile Intake Continuation - 2010 Annual Financial Report

Current Grants

Alternative Tile Intake (Rock Inlet) Cost-share Program Continuation
Heron Lake Sediment Reduction Demonstration Project
Fulda Phosphorus Reduction Initiative
WFDMR TMDL Implementation Project
Heron Lake Phosphorus Reduction Project

Completed Grants

Virtual Tour

View a virtual tour of current Heron Lake Watershed District projects

Newsletters

Board Meeting Information

The next regular board meeting is
Tuesday, July 17, 2012
at 8:00 p.m. in the HLWD office.

Alternative Tile Intakes

www.DouglasSWCD.com

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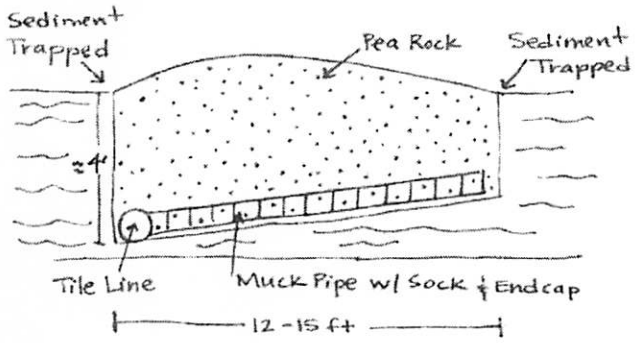

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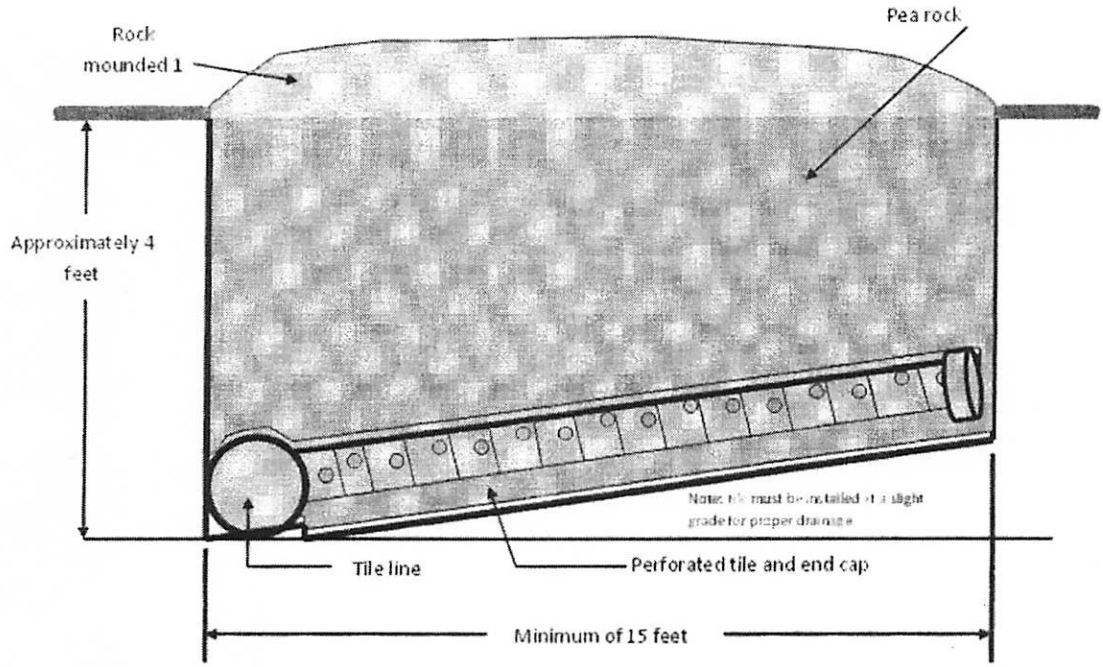
- Modifications made to this design must be approved by Douglas SWCD

Source: T. Gieske 10/97 (Carver SWCD), adapted from Morriem Drainage, Freeborn Co.

Alternative Tile
Cost-share Program

For more information, please contact

HLWD: 507-793-2462
Jackson SWCD: 507-662-6682 ext. 3
Cottonwood SWCD: 507-831-1153
Nobles SWCD: 507-376-9150 ext. 3
Murray SWCD: 507-836-6990 ext. 3



Alternative Tile Intake Details

- Minimum 6 inch perforated tile and end cap
- T-connectors, minimum 6 inch to the size of tile
- Estimated 6-8 cubic yards pea rock (1/4 to 7/8 inch diameter rock only)
- When using perforated tile, ½ inch pea rock is recommended
- Place 6-12 inches of rock at bottom of trench, under tile
- Pea rock should be mounded a minimum of 1 foot above grade

Cost-share Available!

75% not to exceed $300.00 per intake; requests for greater than $300.00 would be approved by the HLWD or respective SWCD board on a case by case basis

Evaluations of Alternative Designs for Surface Tile Inlets Using Prototype Studies

by

Bruce N. Wilson
Hung V. Nguyen
Udai B. Singh
Scott Morgan
Princessa Van Buren
David Mickelson
Ethan Jahnke
Brad Hansen

Biosystems and Agricultural Engineering Department
and
St. Anthony Falls Laboratory

University of Minnesota

Final Report
Minnesota Department of Agriculture
Contract number 417121

August, 1999

The research project was conducted with the support of the Minnesota Department of Agriculture and with funds provided by the Minnesota Legislature.

EXECUTIVE SUMMARY

Surface tile inlets are widely used in Minnesota to remove water quickly from small surface depressions. These inlets are needed to allow for the timely planting of crops or to prevent excessive crop damage after heavy rainstorms. However, they also provide a pathway for contaminants to enter streams and rivers. This pathway is under increased scrutiny for runoff from fields that have received animal manure. Research is needed to evaluate the effectiveness of alternative inlets and to develop appropriate design procedures.

Conclusive field studies of alternative drainage systems require several years of data collection because of Minnesota's highly variable weather. This is particularly important for blind inlets which can become ineffective with time as deposited material obstruct the movement of water. Prototype models have successfully been used in numerous hydraulic studies. Experimental data can be inexpensively and quickly obtained. Five years of runoff and contaminant delivery were evaluated in this study using a prototype model.

A survey of alternative inlet designs currently used in Minnesota was done before selecting the particular inlets to be evaluated. The most simple and common inlet type is the rock-intake design. Although the life of these inlets can exceed 20 years, little is currently known about its effectiveness in removing sediment and other contaminants. More complex designs have been attempted. In general, they plug quickly and are unable to prevent crop damage for large events. Based on information obtained from the survey and advice from a technical advisory committee, five different inlets were selected for this study. They are: flush and slotted pipes; fine, medium, and coarse material for blind inlets.

Dimensionless parameters were used to provide the theoretical framework for experimental design and data analyses. The hydraulic parameters for the design of flush and slotted pipes are well established. These parameters were used to construct the prototype model so that experimental results are applicable to field conditions. For blind inlets, the appropriate representation is more difficult because of the changes in media characteristics with sediment deposition. Design curves for these inlets were proposed using an intuitive set of dimensionless parameters. Data were collected in the laboratory and in the prototype model to evaluate the proposed design procedures.

All of the inlets were effective in removing sediment in the prototype model. This is partially the result of using inflow sediment with a large number of aggregates. The most effective inlet for removing sediment was the blind inlet with the finest material that had an overall trap efficiency of 95%. It also was the quickest media to be plugged with sediment. The least effective inlet was the flush pipe with an overall trap efficiency of 83%. All of the inlets were also effective in removing phosphorus. The pipe systems had a trap efficiency for total phosphorus of approximately 66%; whereas the blind inlets had trap efficiencies ranging between 82% to 88%. The proposed design curves were generally supported by the laboratory and prototype data. The role of air movement in the prototype model is worthy of additional investigations.

A Comparison of Sediment and Phosphorus Losses from Rock Inlets and Open Inlets in the Lower Minnesota River Basin

By Tim Gieseke

Study funded by Metropolitan Council

Study administered by Carver Soil and Water Conservation District

Contributions made by Minnesota State University-Mankato and University of MN Dept. of Soil, Water and Climate.

Cooperation provided by 12 Carver County Producers.

Background for the Inlet Study

- Surface tile inlets are a common practice to remove excess surface water for crop production.
- The cost/benefit ratio for installing surface open inlets have been shown to be favorable for crop producers.
- Studies in MN have shown that sediment losses through open surface inlets account for 82-99% of the loading in comparison to subsurface drainage systems.

Rock Inlet & Open Inlet Research Site

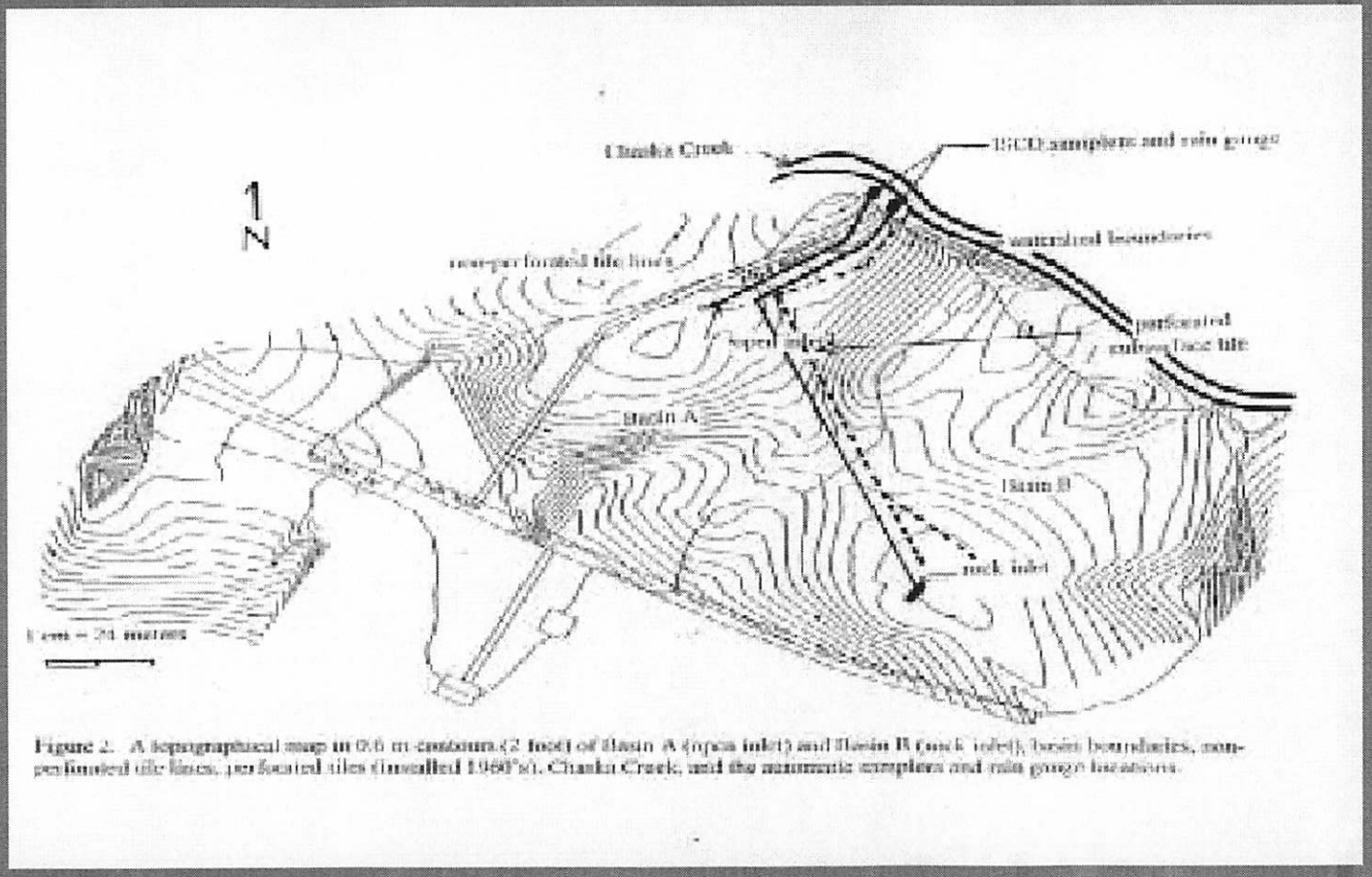


Figure 2. A topographical map in 0.6 m contours (2 foot) of Basin A (open inlet) and Basin B (rock inlet), basin boundaries, non-perforated tile lines, perforated tiles (installed 1980's), Chanka Creek, and the automatic samplers and rain gauge locations.

Rock Inlet design

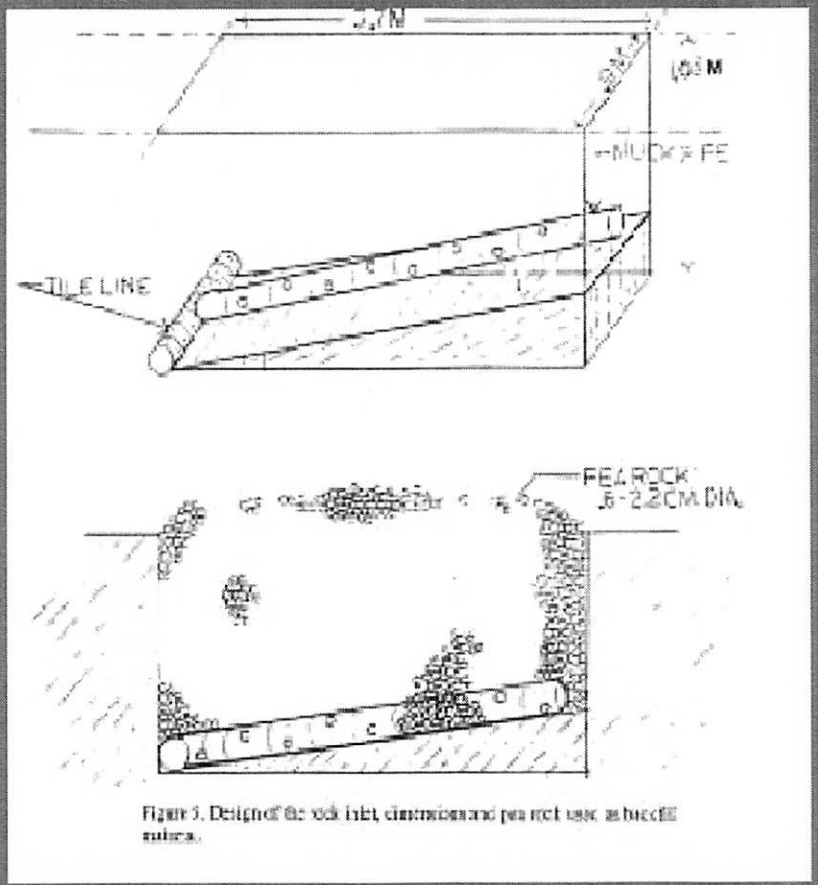


Figure 3. Design of the rock inlet, dimensions and pea rock used as backfill material.

Open Inlet design

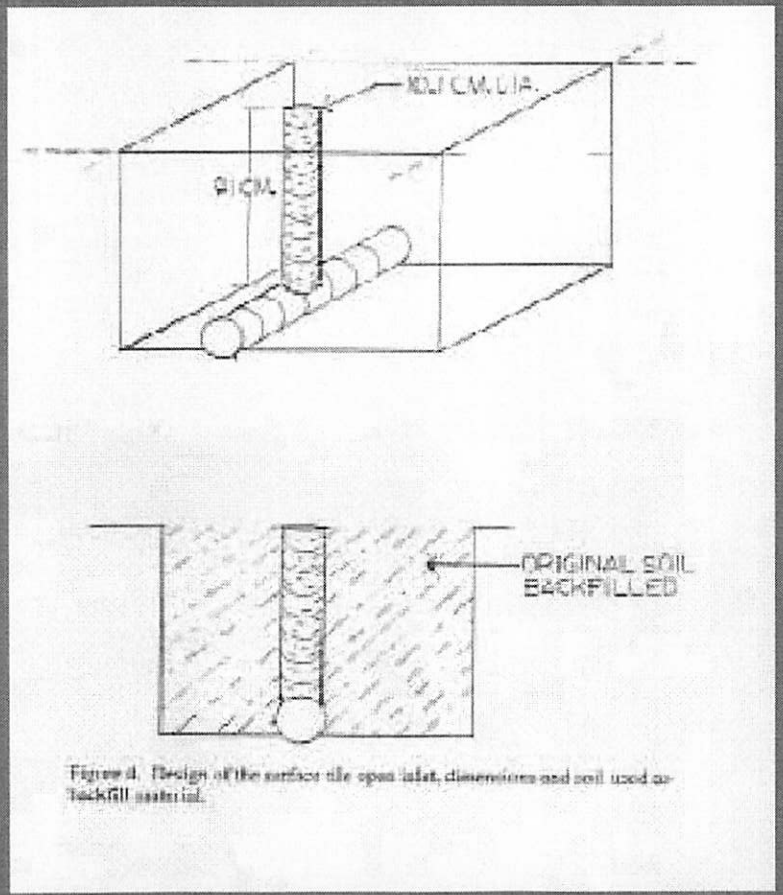
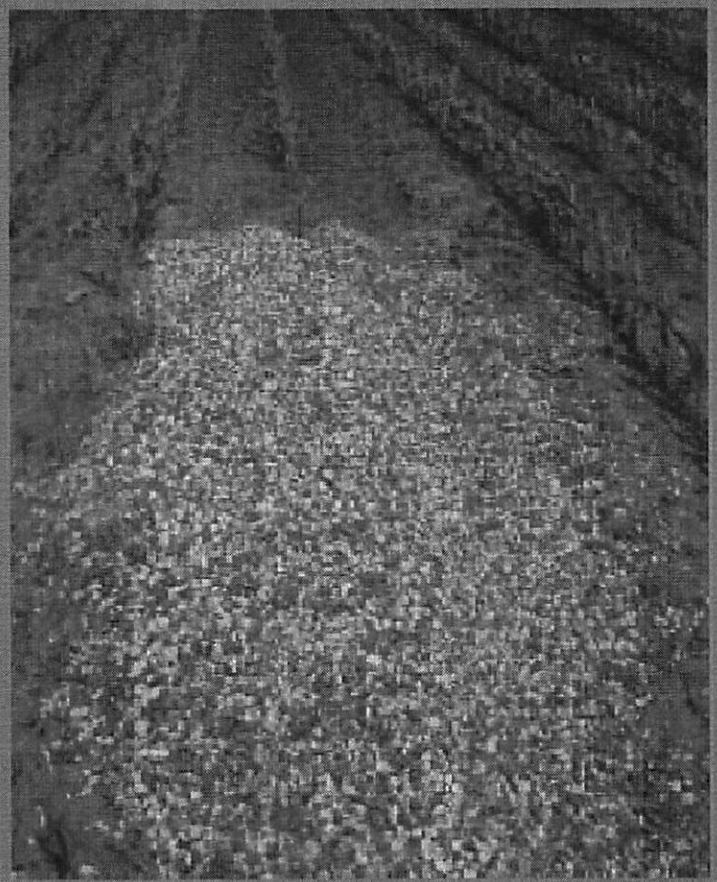


Figure 4. Design of the surface tile open inlet, dimensions and soil used as backfill material.

Muck pipe connection and pea rock backfill

Backfill trench to 1 foot above field grade

Rock Inlet



Open Inlet

Monitoring stations for Rock and Open inlets at Chaska Creek

Steady Rainfall May 11-13, 1999 & Intense Rainfall July 3, 1999

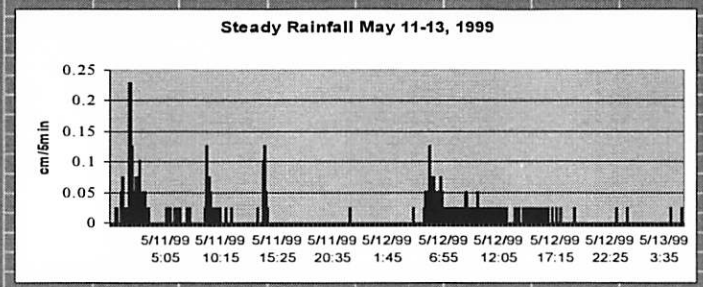
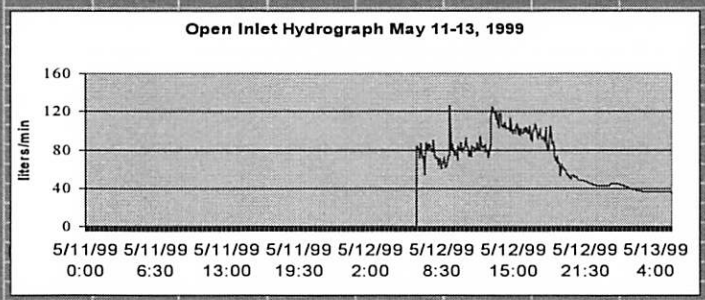
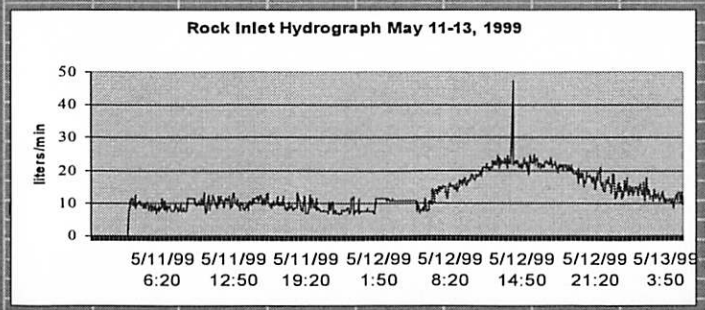
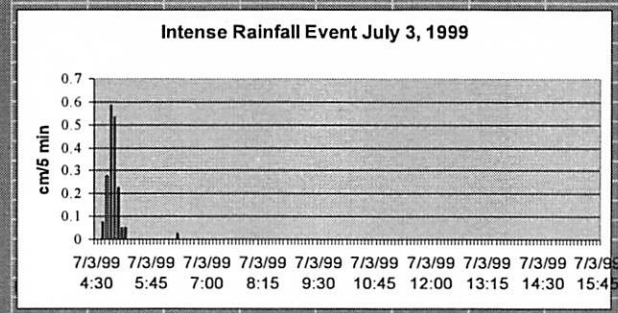
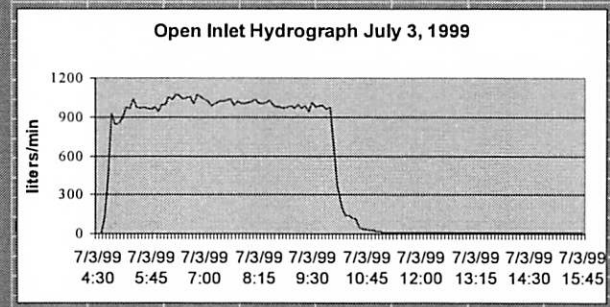


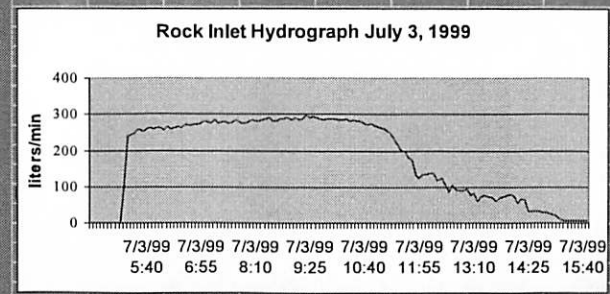
Figure 6a. Steady rainfall event on May 11-13, 1999 producing 6.5 cm.





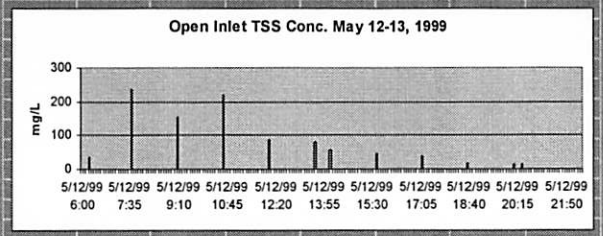


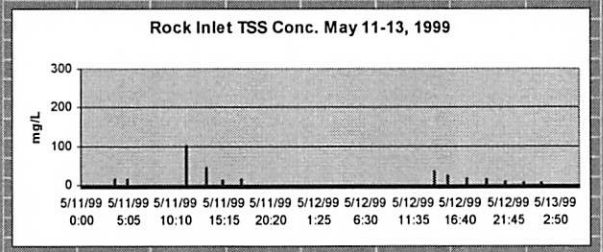


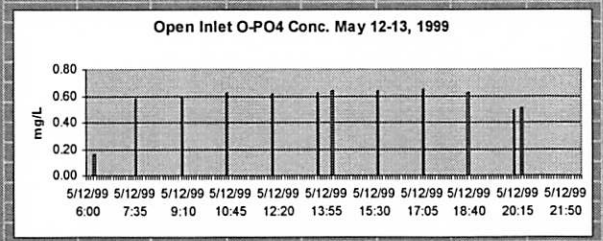


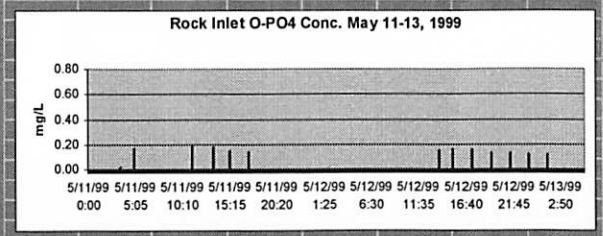
TSS and O-PO4 Concentrations

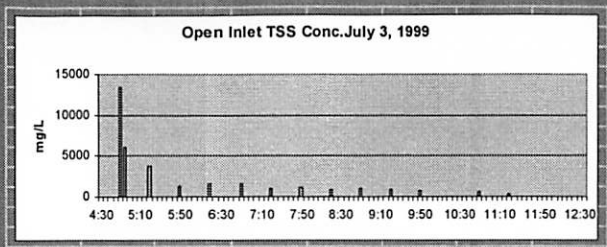
May 11-13 & July 3, 1999

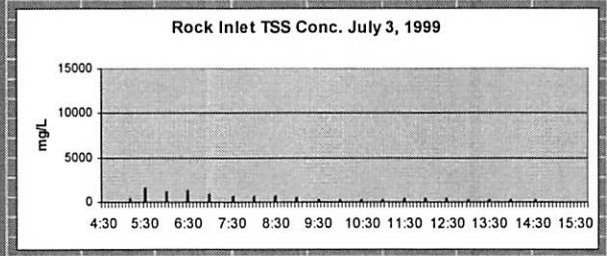


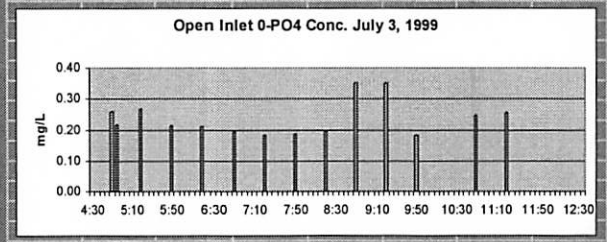


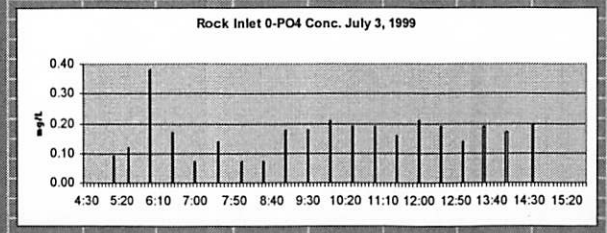




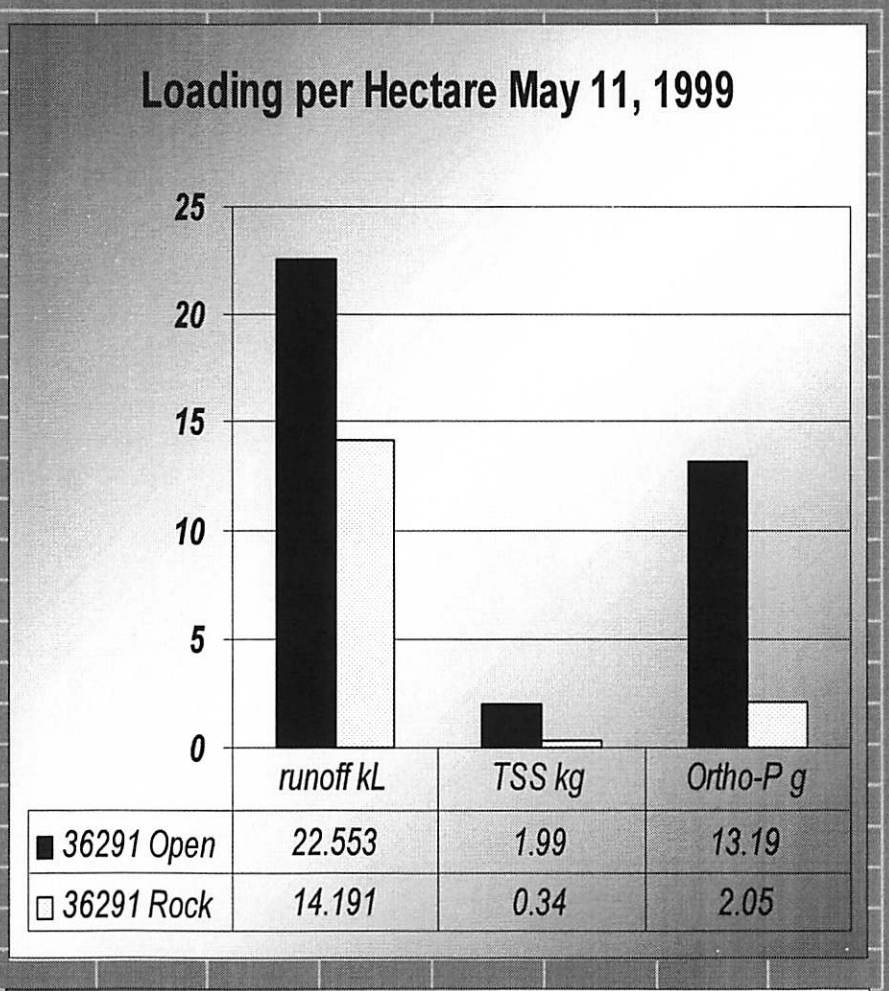




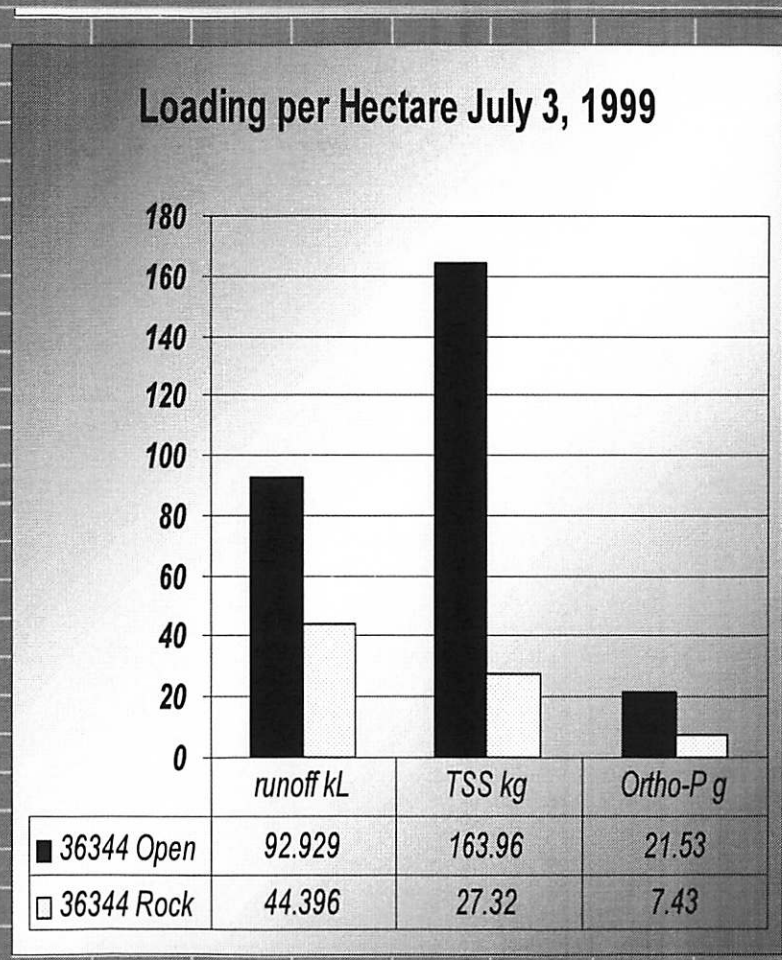




TSS and O-PO4 Loading per Hectare
May 11-13, 1999 & July 3, 1999

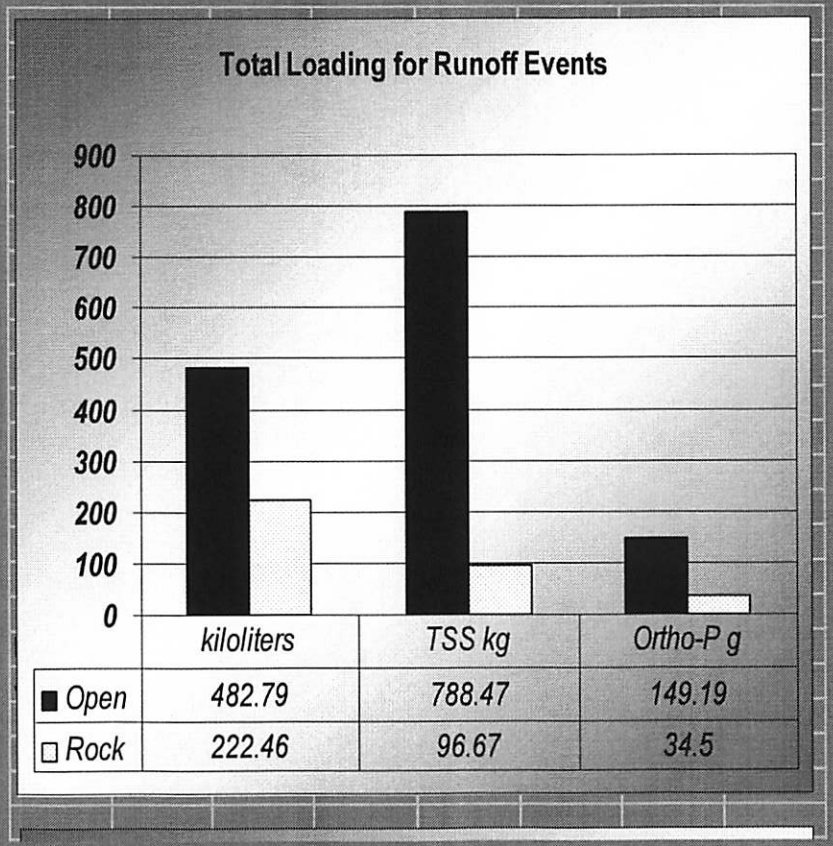


	runoff kL	TSS kg	Ortho-P g
36291 Open	22.553	1.99	13.19
36291 Rock	14.191	0.34	2.05

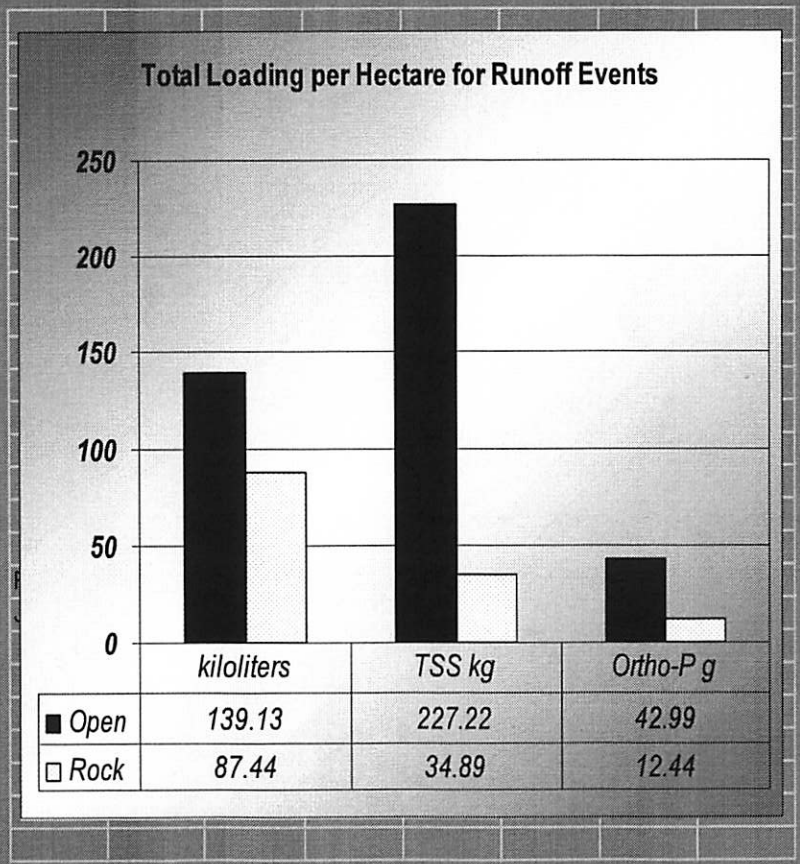


	runoff kL	TSS kg	Ortho-P g
36344 Open	92.929	163.96	21.53
36344 Rock	44.396	27.32	7.43

Combined Total Loading and Loading/Hectare for July 15 and August 22, 1998; and May 11-13 and July 3, 1999.

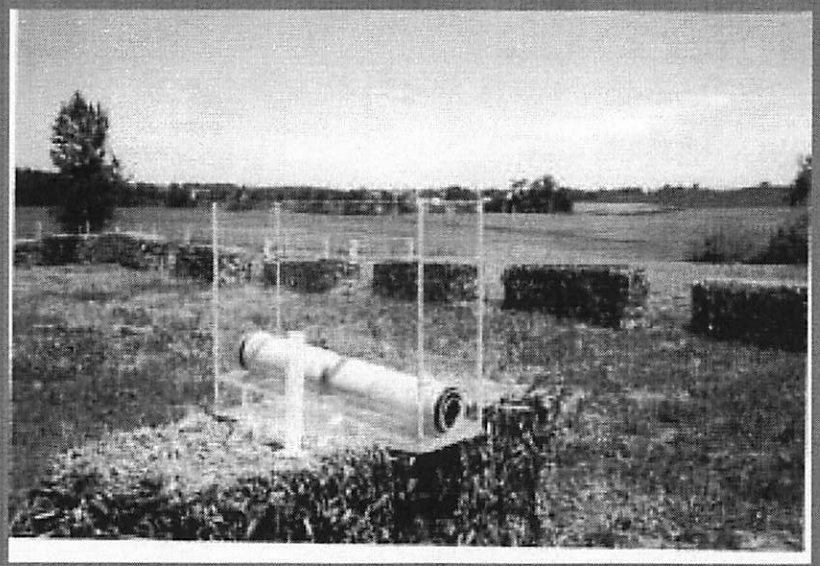


	kiloliters	TSS kg	Ortho-P g
■ Open	482.79	788.47	149.19
□ Rock	222.46	96.67	34.5



	kiloliters	TSS kg	Ortho-P g
■ Open	139.13	227.22	42.99
□ Rock	87.44	34.89	12.44

Rock Inlet Model

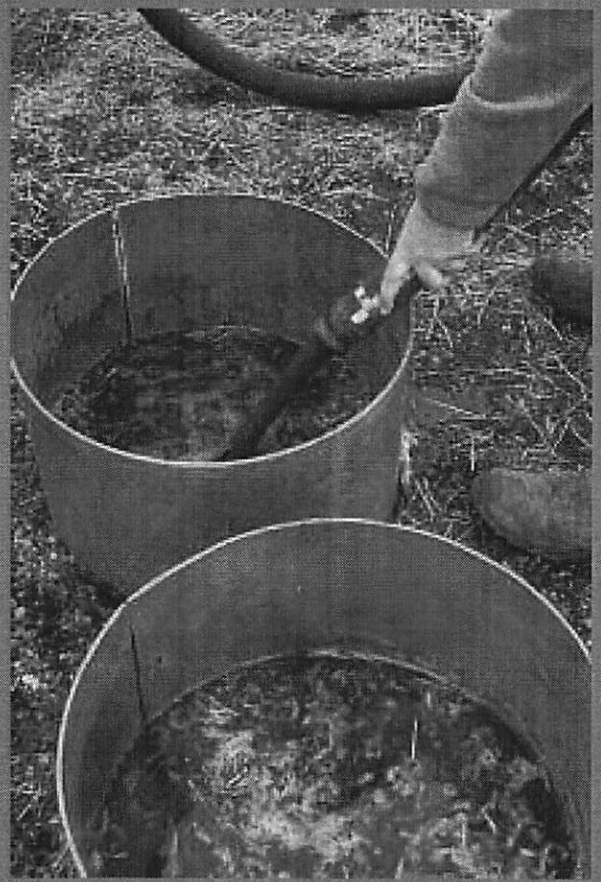


Porosity and Infiltration Test

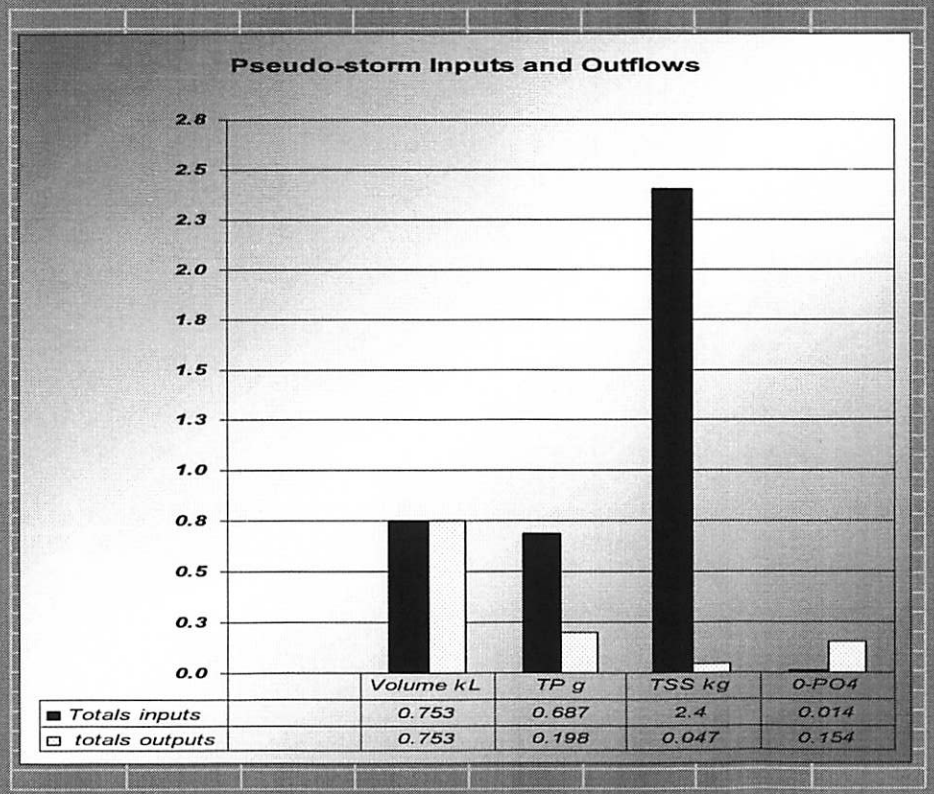
- The rock inlet (3 ft. x 12 ft.) had 10 times the (porosity) opening compared to the 4-inch open inlet.
- A Infiltrometer Method was used to determine the rate of infiltration of a new and a two-year old rock inlet.
- A reduction of 82% in the infiltration occurred after spring field cultivation.

Simulated Storm Event

- A Simulated Storm Event was conducted to determine the effects the rock inlet had on loading for TSS, TP, and O-PO4.



Total Input and Discharge for TSS, TP, and O-PO4 during the Simulated Storm Event



Conclusions

- 1. Rock Inlets significantly reduce the delivery of TSS into the subsurface drainage tile systems.
- 2. Rock Inlets may reduce the delivery of O-PO4 in the runoff events by lessening the ponding around the surface inlet.
- 3. Rock Inlets significantly reduced the delivery of TP into the subsurface drainage tile system, as measured during the Simulated Storm Event.

Future Research Topics

- Rock inlet infiltration capacities under differing soils, cropping and tillage practices.
- Rock inlet filtering vs. settling effects.
- Rock inlet dimensions needed in relation to watershed size, slope and soils.
- Rock inlet effects on crop production.
- Seasonal drainage characteristics of rock inlets.
- Rock inlet effects on other chemical parameters.
- Effects of other types of media on water quality.

DEAR SIR.

I'M LATE IN PUTTING IN MY 2¢ WORTH FOR THE MOST PART BECAUSE I DON'T THINK IT WILL DO ANY GOOD. ANYONE WHO HAS LIVED IN THIS STATE FOR VERY LONG KNOWS WHOSE INTERESTS GET THE MOST CONSIDERATION BY FAR — FARMERS OR MORE CORRECTLY AGRI BUSINESSMEN. ALL THEY HAVE TO DO IS SQUEAL A LITTLE BIT AND THEY GET WHAT THEY WANT BECAUSE AS WE ALL KNOW SO WELL THEY'RE TRYING TO FEED THE WORLD. NOT BECAUSE THEY'RE TRYING TO SQUEEZE EVERY LAST NICKEL OUT THEIR LAND THEY CAN NO MATTER WHAT THE LONG TERM CONSEQUENCES ARE. I HOPE THE EPA DOES TAKE OVER BECAUSE NOTHING IS GOING TO CHANGE WITH NORTHEY AND BRANDSTAD IN CONTROL. AS I UNDERSTAND IT THE EPA WAS MOTIVATED BY A LAWSUIT BY AN ENVIRONMENTAL ORGANIZATION SO MAYBE THAT'S WHAT WE NEED HERE.

SINCERELY
V. LEO
RED FIELD

Utu 14-Jun-14 2012

Nutrient Reduction Strategy:

I am seventy year old lifelong resident of the state of Iowa. Throughout the years I have observed air and water pollution and soil erosion continuing. Voluntary correction of any of these problems has not worked. I want meaningful laws and fines written and enforced. Drainage tile, plowing to the edge of stream banks, ag wells, applying fertilizer/manure onto frozen ground, and not investing in wetlands and greenbelts along rivers and

and streams demonstrates a lack of real commitment to solving our pollution problems for decades.

Those of you supporting voluntary changes are trying to convince the public that changes have been made voluntarily. It's not enough! The people who are already practicing good conservation and environmental practices will not be negatively impacted. We need new laws and enforcements for those who are not following good practices.

If the correct measures are not taken, I want the EPA to take over!

Sincerely,
Sharon Glasgow
5962 Greendale Pl.
Johnston, IA

DEC 31 2012

The Iowa Policy Project

20 E. Market Street • Iowa City, Iowa 52245 • (319) 338-0773
www.iowapolicyproject.org

December 2012

IPP STATEMENT — David Osterberg, Executive Director

Comments on Iowa Nutrient Reduction Strategy

David Osterberg, Executive Director of the Iowa Policy Project, makes the following comments on the agriculture policy section of the proposed Iowa Nutrient Reduction Strategy:

Section 1—Policy Considerations and Strategy

Page 12—Conservation and Water Quality Funding
The section presents misleading data, as it covers only the last two fiscal years. This is inadequate for a report of this supposed breadth. Using only the last two fiscal years allows the authors to imply that funding for water quality has remained the same or increased a bit. The past ten years of data demonstrates this skewed implication is false.

The Iowa Policy Project looked at last decade of water quality funding and found about a 30% reduction in program funds administered by the Department of Natural Resources and the Department of Agriculture and Land Stewardship. The report we released in March of this year states the following:

> "When adjusted for inflation most of these programs saw significant decreases; the average inflation-adjusted decrease for these seven budget items is over 30 percent. In seven of the 10 programs, funding declined over the span of 10 budget cycles." (Page 5 of *Drops in the Bucket: The Erosion of Iowa Water Quality Funding.*) http://www.iowapolicyproject.org/2012docs/120301-water.pdf

A second, more recent IPP report update found the Iowa Legislature did not do much more than make very small increases in a few programs, thus our findings remain valid and more pertinent to the issues at hand. Water quality funding has decreased markedly over time. (See *Drops in the Drops in the Bucket: Even Rare Boosts in Water Funding Evaporate with Inflation.*)
http://www.iowafiscal.org/2012research/120626-IFP-water-bgd.html

One example shows how this section of your report is misleading. By picking only two years, your authors implied that the Watershed protection fund, which now stands at $900,000, did not change. It did not change between FY12 and FY13, however as recently as FY07 it was $2.7 million and if inflation is considered the reduction has been more, down from $3.7 million in FY03.

Page 17—Animal Feeding Operations
Another example of misleading by omission is in the discussion of water quality impacts of animal feeding operations. The authors somehow left out the fact that EPA is threatening to take over the NPDES permit program from Iowa because of DNR's inadequate job of regulating animal agriculture in the state. Your authors may not agree with EPA's contentions, but they should not be given the luxury of avoiding this important point. While one might be able to make a case that reducing the number of inspectors from 23 in 2004 to 8.75 in 2010 was justified and did not affect water quality, the EPA perspective and potential action must be acknowledged. One must ask if this omission is meant to cover up the controversy.

Page 19—Funding
"The pace of the strategy's implementation will be subject to available financial and human resources. "

Also stated elsewhere, as an "action item" for funding in the Executive Summary:
"Make most effective use of funding resources including maximizing benefits per amount expended."

Overall Strategy for Non-Point Pollution Reduction
As stated in the Executive Summary (Page 7), "This strategy encourages the development of new science, new technologies, new opportunities and further engagement and collaboration of both the public and private sector."

However, nowhere does this report mention anything about new funding. Furthermore, this omission is part of a strategy statement that falls woefully short on action, when farmers have known what to do for generations.

Secretary Northey in the recent Water Resources Coordinating Council on December 6, 2012, stated that his agency would ask for more resources in the next fiscal year for cost-share dollars to encourage implementation of this strategy, which calls for nothing more than voluntary adoption of agricultural measures to reduce nutrients. However one need only look at funding for his agency and the DNR on Water Quality programs over the last decade to understand his request is inadequate. Given these specific instances of the inadequate job with agriculture policy, it is difficult to conclude IDALS is serious about reducing N and P in Iowa waters.

Note: These comments also were submitted electronically on December 28, 2012

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
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Karen Herwig
4710 Mills Civic Pkwy. #601
West Des Moines, IA 50265-5232
515-225-0361
oiuser@yahoo.com

DEC 31 2012

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Toni Hull
22312 Maple Rdg
Adel, IA 50003-8394
Toshka1967@hotmail.com

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Del Holland
1701 East Court Street
1701 East Court Street
Iowa City, IA 52245-4642
319-338-5220
delholland@aol.com

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Richard McGrath
804 Monroe Street
Pella, IA 50219-1181
mcgrathr@central.edu

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Dawn Snyder
4007 Glen Oaks Blvd
Sioux City, IA 51104-4314
naturelady97@gmail.com

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Gretchen Graff
PO Box 245
13175 253rd Avenue
Spirit Lake, IA 51360-0245
712-336-0703
ialakes@mchsi.com

To whom it may concern:

I am very concerned about our Iowas rivers, streams and, well waters.
With corn prices being at record levels I am seeing lots of conservation efforts such as waterways and buffer strips being plowed for the yellow gold kernel. So much for volunteer conservation efforts by the agriculture industry being a good steward for the land. It's time for regulations.

Bob Anderson
2729 Locust Road
Decorah, IA 52101

Bob Anderson
2580 310th St
Ridgeway, IA 52165-8528
rrp@mchsi.com

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Mark Kane
667 44th St.
Des Moines, IA 50312-2346
515-277-2183
markkane@q.com

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Kim Stroud
24124 -140th St.
Spirit Lake , IA 51360-7045
515-221-9409
Stephenkimstroud@rocketmail.com

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Daisy Porter
710 Church Street
Eldon, IA 52554-9797
porterdaisyj@gmail.com

To whom it may concern:

It's pathetic: Everyone I know is afraid to swim in the waters, people choose to TRAVEL TO MINNESOTA to fish, and fishing in Iowa has primarily been relegated to subsistence fishing, which is also tragic (NO ONE should be eating fish from these waters.) A close friend of mine travelled the state, testing waters, and she became so fed up with the lack of action, she left the state for a job in Maryland.

I am writing about the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts.

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Elizabeth Cummings
725 Bradley St
Iowa City, IA 52240-6430
idea@mchsi.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan,who for several years was a member of the IOWATER volunteers, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

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Miriam Patterson
1904 Northcrest Circle
Ames, IA 50010-5113
mimpatter@gmail.com

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Sherry Haney
611 E Madison St
Knoxville, IA 50138-2140
skhaney@iowatelecom.net

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Eileen Bowerman
5740 Walnut Hill Ave
Des Moines, IA 50312-1433
515-279-2818
ekeohb@gmail.com

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Jennifer Garst
708 Brookridge Ave
Ames, IA 50010-5834
515-232-8432
jgarst@alumni.brown.edu

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Will Hoyer
1311 Tomahawk Dr
Dubuque, IA 52003-8767
willhoyer@yahoo.com

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Mike Gautherat
2000 n. ct. 12-g
Fairfield, IA 52556
mgauth@lisco.com

To whom it may concern:

I suppose I could just send on the text (which I agree with) suggested by the Iowa Environmental Council (below) with my signature, but I'd prefer to communicate what I really think. First, let me make clear that I am a native Iowan and have served as professor of Biology at Iowa State University for the past 25 years. As both an Iowan and a biologist I am deeply disappointed by the State of Iowa's attitude and efforts regarding water quality.

I understand that the issues surrounding water quality are complex. I understand that agriculture is not the only cause of water quality issues in Iowa. I understand that some farmers make sincere efforts to protect water quality - I know some of them personally. But - I also spend a lot of time in the Iowa outdoors hiking, fishing, canoeing, pheasant hunting, etc., and I see many examples of farmers plowing to edge of streams, pasturing livestock in streams, fall plowing, streams with no buffer strips, more agricultural drainage tiling being installed, applying ammonia in the fall, etc. Here's the reality of our current situation - by far the largest contributor to diminished water quality in Iowa (and downstream) is agriculture. This is not surprising given that the large majority of our land surface is devoted to agriculture. The insistence of many farmers, the Farm Bureau, and the 19 November 2012 proposal that any implementation of strategies on agricultural land to improve water quality be completely voluntary would be a good joke, if it wasn't so sad. If voluntary measures were sufficient, Iowa's water quality would have greatly improved long ago. This is hardly surprising. Do we make compliance with speed limits on our highways "voluntary"? Do we make paying the listed price for items in a grocery store "voluntary"? Of course not! Why? Because, although some people would abide by the speed limit or pay the listed price, most would not. This is not a revelation.
This is human nature. Asking farmers to voluntarily go against their financial interest, or traditional practices, to protect downstream water quality is ridiculous and will, without question, result in exactly what we've got - very poor water quality in our rivers and streams. Resources, volunteers, and REGULATION are all required to make progress on this challenging issue.

Over the past 15 years I have led an effort to help Iowa State students come to an understanding of some of the challenges facing Iowa's rivers.
This activity (the "Skunk River Navy":
http://www.biology.iastate.edu/SRN/SRN.html) has engaged about 1,900 student volunteers and has included the removal and recycling of about 68 tons of trash from our local streams. I have personally spent over 50 Saturdays wading through the South Skunk River leading students in this effort. But the important point is that the Skunk River Navy is NOT an official part of my job. I would been paid exactly as much by ISU over the past fifteen years if I not started the Skunk River Navy. So - I'm not just some "pointy-headed college professor type". I am a native Iowan and university-level educator who has voluntarily put sweat and blood equity into trying to improve our water quality, as well as raise awareness among young Iowans about this important issue. I'm serious about this - and I challenge you to get serious too. Recommending only voluntary water quality protection practices on agricultural land is the same as saying "we're not actually going to do anything about this because we don't really think it's important". We've been saying that for years.

It's how we got to the situation we're in. Get serious. Develop appropriate regulations to protect, and improve, Iowa's water quality, in addition to finding the needed resources to support both voluntary and required water quality protection practices.

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Jim Colbert
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Burt Gearhart
22235 277th Ave
Leclaire, IA 52753-9462
burtec@gmail.com

To whom it may concern:

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Colton Davis
3517 University Ave
Des Moines, IA 50311-2344
colton.davisONE@gmail.com

To whom it may concern:

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John Mertz
706 Carle
Knoxville, IA 50138-3201
641-842-6472
jm363@iowatelecom.net

To whom it may concern:

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Bob Ferguson
500 E Burlington Ave
Fairfield, IA 52556-3169
bob@rapidoffice.com

To whom it may concern:

As a woman with breast cancer I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts.
I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

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Christine Carpenter
1722 W Ridgewood Dr
Cedar Falls, IA 50613-4572
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christine.b.carpenter@gmail.com

To whom it may concern:

I enjoy kayaking. But I do not kayak in Iowa; instead I travel to Minnesota, where the lakes and rivers are much cleaner. Iowa's water quality consistently fails to meet my expectations.
I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

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Russell Tabbert
9 College Park Rd
Grinnell, IA 50112-1207
rtabbert@iowatelecom.net

To whom it may concern:

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David Eash
2350 Sugar Bottom Road
Solon, IA 52333-9579
deash@southslope.net

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Siobhan Danreis
PO Box 82
Palmer, IA 50571-0082
712-730-8179
sdanreis@palmerone.com

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Ronald Richardson
3014 Norwalk Ln
Missouri Valley, IA 51555-8051
712-644-3173
ronjeri@iowatelecom.net

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Kyle Hoffmann
409 West 3rd St South
Newton, IA 50208-3830
641-417-8394
kyle2013@iastate.edu

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Derrick Peters
314 Highway 51
Postville, IA 52162-8607
derrickpeters@centurytel.net

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Christine Kirpes
377 Crandall Dr NE
Cedar Rapids, IA 52402-1552
319-373-5405
cmckirpes@gmail.com

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David Hauge
309 NE Main Street
Grimes, IA 50111-2010
515-986-4224
Dram5254@aol.com

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Mary Larson
1396 285th Ln
Madrid, IA 50156-7535
marybethlarson3@gmail.com

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The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa. I agree with everything that has been said, but I really don't know how we are going to get this all done, when we are letting these big confinement farms move into our state which I believe they will be more of a problem then a solution to clean up our water in this state of ours. We need to be hitting up our government to be changing some of the laws that allow these big confinement farms to move into our state. Thank You! Colleen Crook

Colleen Crook
1009 320th Ave.
Malcom, IA 50157-8073
baccrook@gmail.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. I'm a lifelong Iowan.
Having traveled to other states and countries, however, I'm accutely aware of the poor quality of our waterways and water bodies in Iowa. Iowa's water quality consistently fails to meet my expectations and remains poor despite years of half-hearted efforts. I support the development of a meaningful, substantive, quantifiable, and time-tabled cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal. It fails to provide any confidence this goal will be achieved. And it calls into question the commitment of our state's leaders to meaningfully improve our water quality.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different. But they should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

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Norbert Kaut
646 44th Street
Des Moines, IA 50312-2302
515-279-7973
nkaut@yahoo.com

To whom it may concern:

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Andrew Snow
2601 Franklin Ave
Des Moines, IA 50310-5447
andrewsnow08@gmail.com

To whom it may concern:

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Janet Bequeaith
1725 26th St
Des Moines, IA 50310-5404
janetbequeaith@msn.com

To whom it may concern:

I am writing in regard to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. Water quality in Iowa is poor.
I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will improve its water quality. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

Iowa's nutrient reduction strategy needs to clearly state how agriculture sources will decrease their extremely significant contribution to Iowa's water quality problems.

The strategy needs to establish some mechanism for accountability, such as clear numeric goals for nitrogen and phosphorous pollution reduction that are tailored to the unique needs of Iowa waters. The strategy should also describe the state's response if those reductions do not occur according to a reasonable timetable. The goal of the strategy should be to achieve meaningfully cleaner water in Iowa.

Thank you for reading my comments.

Jim Trepka
242 Highland Dr
Iowa City, IA 52246-3227
319-338-0005
jim_trepka@msn.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water.
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Dan Ries
22 N Georgia Ave Ste 300
Mason City, IA 50401-3435
eh3@cghealth.com

To whom it may concern:

I am writing in response to the policy considerations and strategy outlined in the Iowa Nutrient Reduction Strategy. As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. Nutrient caused algal blooms are frequent and at times severe in lakes and ponds where I fish due to agricultural, not municipal, polution. I support the development of a balanced cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version appears to fall short of being able to achieve this goal.

Iowa's nutrient reduction strategy needs to clearly state how all of those who are responsible for causing this problem will be held accountable for helping to permanently and sustainably protect Iowa waters. The strategy's approaches for municipal and agricultural pollution sources will be different and are not balanced. They should share a unified commitment to real action and meaningful results. Mandatory water treatment action by cities will not produce meaningful results without more significant engagement from agriculture.

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Steven Lekwa
1009 So. J Ave.
Nevada, IA 50201-2731
515-382-3389
4lekwas@midiowa.net

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Vicki Hoogeveen
522 Broad St
Des Moines, IA 50315-2337
515-256-7026
vickihoog@yahoo.com

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Jordan Blanchard
6370 E P True Pkwy #1209
West Des Moines, IA 50266-5241
515-229-6874
blanchard.jordan@gmail.com

To whom it may concern:

It is time to leave the rhetoric behind and make people "put their money where there mouth is" when it comes to water quality conservation issues.
Literally for decades we have been giving lip-service to "cleaning up our act" here in Iowa re: water quality. NOW is the time to act!!!!!! As an Iowan, I live in a state where water quality consistently fails to meet my expectations and remains poor despite years of efforts. I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa. I expect the plan to clearly state how Iowa will achieve meaningfully cleaner water. The current version falls short of achieving this goal, and it fails to provide any confidence this goal will be achieved.

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William Edgar
3262 Walnut St
Colfax, IA 50054-7513
515-674-4394
wedgar6273@aol.com

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Nancy Lynch
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Iowa City, IA 52246-2424
319-331-6026
nancylynch1941@gmail.com

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607 Hillside Dr
Fairfield, IA 52556-3636
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Ames, IA 50010-5818
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Margaret Weiss
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Diana Karlowski
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Barbara Beaumont
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North Liberty, IA 52317-9394
bgbeaumont@juno.com

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pastorsarahrohret@yahoo.com

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Marian Gelb
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Des Moines, IA 50321-4702
515-285-3284
marian.gelb55@gmail.com

To whom it may concern:

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djdavis2007@cfu.net

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Shan Sasser
2083 170th Court
Winterset, IA 50273-1169
DTSsasser@gmail.com

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Whitney Davis
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Grinnell, IA 50112-1463
whitneydavis64@gmail.com

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Dave Anson
1905 Oneida Ave
Muscatine, IA 52761-1647
mr.bluesgroove@hotmail.com

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Jeneane Moody
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iowapha@gmail.com

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Jess Mazour
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515-313-5253
jess@iowacci.org

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Megan Dorgan
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To whom it may concern:

I am writing in support of the Iowa Nutrient Reduction Strategy.

I support the development of a cleanup plan for nitrogen and phosphorous pollution in Iowa.

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Robert Summerfelt
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sharihawk@hotmail.com

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condi22o@aol.com

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Gerry Rowland
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gerry.rowland@mchsi.com

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Helenhasapersonalemail@yahoo.com

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bowmansc@kjww.com

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JAN 01 2013

December 27, 2012

VIA FEDERAL EXPRESS

Nutrient Reduction Strategy
ANR Program Services
2101 Agronomy Hall
Ames, IA 50011-1010

Re: Roquette America, Inc.'s Comments on the Iowa Nutrient Reduction Strategy

Dear Nutrient Reduction Strategy Working Group:

This letter is in response to Iowa State University's solicitation of comments on the Iowa Nutrient Reduction Strategy documents. My client, Roquette America, Inc. ("Roquette"), appreciates the opportunity to provide these comments and applauds the principal objective of the nutrient reduction strategy which is to reduce nutrients delivered to Iowa waterways and the Gulf of Mexico. The company supports a strategy that achieves measurable reductions in the nutrients; however, it is Roquette's position that the strategy must be cost-effective.

Set forth below are the various comments submitted by Roquette in response to the Iowa Nutrient Reduction strategy.

1. EPA has recently determined that a uniform set of nationally applicable, technology-based nutrient limits is unwarranted

In the enclosed letter from Michael Shapiro, the Deputy Assistant Administrator for Water to Ann Alexander, counsel for the Natural Resources Defense Council, dated December 14, 2012, Mr. Shapiro stated that an effort to set uniform national limits would require POTWs to incur high costs even where such costs are unnecessary to protect water quality. Moreover, the need to control nutrients at POTWs is a highly site-specific matter that is not well suited to being carried out through a uniform national rule; that not all POTWs nationwide need to meet minimum technology-based limits for nutrients to protect water quality; and that many POTWs would incur high costs individually, and POTWs overall would incur annual costs of tens of billions of dollars nationally to meet

such uniform technology based limits. The EPA's preferred strategy which is in effect across the country is instead to seek to comprehensively control and manage all major sources of nutrients contributing to water quality impairments in particular watersheds, including POTWs and other significant point and non-point sources of nutrients, through water quality-based permitting of point source discharges and nonpoint source management measures.

Based upon the content of the enclosed letter it is clear that the proposed strategy's approach runs contrary to the EPA's well-reasoned assessment of the proper resolution to the discharge of excess nutrient. Over the past decade the EPA has delineated a series of concerns associated with the development of uniform technology based limits. Roquette recommends that the Nutrient Reduction Strategy workgroup approach the problem in a manner consistent with that set forth in the enclosed letter from Mr. Shapiro and that being through the use of water quality-based permitting.

2. Twenty four months is insufficient time for submitting a report to the IDNR evaluating the feasibility and reasonableness of reducing N and P discharged into surface waters

The IDNR's proposed template language for insertion into NPDES permits (copy enclosed) requires that a report be submitted to the Department within twenty-four (24) months from the issuance date of the permit that evaluates the feasibility and reasonableness of reducing the amounts of nitrogen and phosphorus discharged into surface waters. Twenty-four months is an insufficient period of time for sources to properly evaluate the capability of their system for nutrient reduction. Twenty-four months will also provide insufficient time for pilot plant testing. Roquette recommends that the timeline for submission of the report be extended to sixty (60) months to allow facilities sufficient time to gather and evaluate their data and comply with the five criteria set forth in the proposed template language.

3. The industry costs associated with the implementation of the Nutrient Reduction Strategy exceed the benefits achieved

The State of Iowa has embarked on a program to reduce nitrogen and phosphorus discharged to receiving waterways from both point and non-point sources. Due to current regulatory constraints, the Iowa DNR does not have the authority to impose regulations on the agriculture industry. This constraint is true at both the federal and state level. Yet U.S. EPA is demanding states adopt a nutrient reduction strategy. Without regulating the agriculture industry, Iowa estimates it can reduce the Total Nitrogen by 4 percent and Total Phosphorus by 16 percent by focusing regulatory efforts on the point sources only. The estimated capital cost alone for this effort is estimated at $1.5 billion over 20 years.

Because Total Phosphorus is the limiting nutrient in nearly all of the streams in Iowa throughout most of the year, and the Total Phosphorus is well above a concentration that it would limit algal growth, a four percent reduction in Total Phosphorus will have no measurable benefit in water quality, despite the $1.5 billion expenditure. Given the economic impact on both point and non-point sources and the uncertainty over what can actually be achieved in the agricultural industry, a phased approached would seem appropriate.

Roquette recommends that the Iowa DNR focus on Total Phosphorus and defer any control on Total Nitrogen for at least a decade, which will reduce the economic burden while still getting the greatest benefit from the expenditures. To the extent biological phosphorus removal is implemented, there will be a significant reduction in Total Nitrogen that comes as part of the process.

Total Phosphorus from agriculture is primarily associated with storm water. One option the state of Iowa might consider to gain considerable traction with reduction of Total Phosphorus is to require all farms over a specified size (for example 5 acres) to prepare and submit to the IDNR a Storm Water Pollution Prevention Plan (SWPPPs). The plan would detail the farm's Best Management Practices (BMPs). These SWPPP could be posted on the Iowa DNR website thereby allowing citizens to actively verify what is being practiced versus what has been committed to by each agriculture entity. Incentives to plant perennial energy crops, extend crop rotations, establish grazing pastures and the retirement of land could also reduce nutrient releases.

If Iowa is committed to meaningful nutrient reduction, agriculture must be significantly more involved than what has been proposed.

4. Annual limits for TN and TP are preferable to a lesser timeframe

The nutrient reduction strategy contemplates annual limits for TN and TP. To the extent numeric effluent limits are to be set, we fully support the annual limit approach. Absent this approach, back-up chemical precipitation would be necessary for TP in order to assure compliance with monthly limits of the same values.

5. TN and TP load limits are the only form of limit that is appropriate for inclusion in NPDES permits

To the extent numeric effluent limits are placed in NPDES permits, they should be load limits only, based on the target concentration and Average Wet Weather (AWW). This will allow regulated facilities time to improve their understanding of how to operate

biological nutrient removal more efficiently as new capacity is added up to the AWW. The result will be the desired mass limits, without the concentration restriction.

6. Best Professional Judgment must be used for establishing TN and TP limits in NPDES permits

For industrial applications, Best Professional Judgment (BPJ) should be used to establish effluent limits. The same annual limit only approach should be applied to industrial limits, and again, they also should be applied as mass limits only.

7. NPDES permit expiration should be the only trigger event for inclusion of TN and TP limits

There are a number of reasons that arise that require NPDES permits to be amended prior to the five year renewal cycle. For planned future expansions with an increase in TN and/or TP, imposing the nutrient limits is appropriate from a design and planning perspective. However, permits are routinely opened for a variety of minor issues, including change in hydraulic capacity based on previously permitted expansions. These types of reopenings should not trigger the nutrient reduction strategy. Addressing the nutrient reduction strategy should wait until the permit expires so that proper planning can be carried out.

8. Additional public input is essential for purposes of arriving at a comprehensive nutrient reduction strategy

Additional public input in the Nutrient Reduction Strategy is needed. The cost implications are too great to proceed without adequate public input. Once the record is comprehensive in scope the strategy needs to go through formal rule making procedures.

9. A comprehensive framework for a TP and TN credit trading program must be developed prior to implementation of the nutrient reduction strategy

The Nutrient Reduction Strategy commits to the development of a credit trading program for nutrients. Conceptually, this is a positive approach; however, if the point source implementation occurs before the non-point source baseline conditions are established, credits from the farm practices will be unquantifiable. Presumably all farms will be required to adopt some nutrient reduction strategy, so it is not clear who will have any excess nutrient reduction credits to trade.

10. The size threshold for applicability of the nutrient reduction program to industrial facilities should be a minimum of 1 million gallons per day

For industrial dischargers, it is unclear what size threshold, if any, was selected. For municipal wastewater treatment plants, the nutrient limits would only apply to facilities with a discharge rate greater than 1 mgd. This same size threshold of 1 mgd is appropriate for application to the industrial dischargers, for the same reasons as outlined in the *Iowa Nutrient Reduction Strategy* report for municipalities.

11. Roquette questions whether the promised level of flexibility associated with NPDES permitting and implementation of the nutrient reduction strategy will materialize

Since the Nutrient Reduction Strategy is a guidance document and not a rule or law, what guarantees does industry have that non-point sources will follow these voluntary rules and that DNR will approach NPDES permitting with the promised level of flexibility?

12. Additional clarity is sought on the how the phrase "significant amendment" will be defined

What constitutes a "significant amendment" to an NPDES permit that would trigger the terms of permit to be reopened and thus subject the facility to the 2 year feasibility study and the other nutrient strategy requirements?

13. The IDNR should seek additional comment from the regulated community on an economic threshold for treatment system modifications.

The IDNR should obtain additional input from the regulated community on the appropriateness of an economic threshold and the trigger level for a treatment system modification.

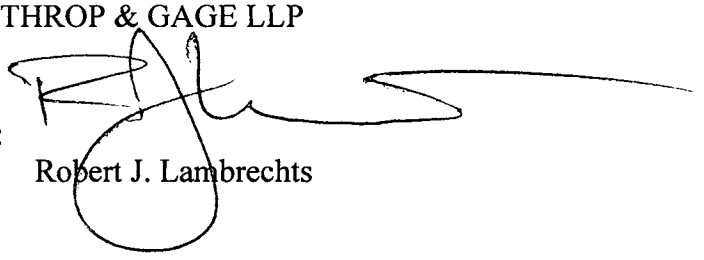
14. Changes in water quality should be regularly evaluated

Because nutrient application rates, cropping patterns, and precipitation levels are constantly changing, changes in water quality should be evaluated regularly to evaluate the effectiveness of nutrient management practices.

Should you have any questions on the comments above please contact me at (913) 451-5126 or Bill Gibson of Roquette at (319) 526-3411.

Respectfully,

LATHROP & GAGE LLP



By:
Robert J. Lambrechts

Enclosure

cc: William J. Gibson
James Huff

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 1 4 2012

OFFICE OF WATER

Ms. Ann Alexander, Esq.
Natural Resources Defense Council
2 North Riverside Plaza, Suite 2250
Chicago, Illinois 60606

Dear Ms. Alexander:

Thank you for the November 27, 2007, letter to Administrator Johnson and the accompanying petition on behalf of the Natural Resources Defense Council and ten other organizations requesting that the U.S. Environmental Protection Agency publish updated information about secondary treatment nutrient removal capability and establish new technology-based nutrient limits as part of the secondary treatment standards. The EPA has thoroughly considered the information you provided in the petition. The EPA's decisions concerning your requests are guided by the Agency's commitment to carry out the objective of the Clean Water Act to restore and maintain the nation's waters.

NRDC's first request cites CWA Section 304(d)(1) in asking the EPA to publish updated information on the degree of nutrient reduction attainable through secondary treatment of effluent discharged by municipal wastewater treatment plants, typically known as publically owned treatment works. In response, the EPA is publishing the most current data available on the degree of effluent reduction attainable through the application of secondary treatment. With respect to nutrients in particular, the EPA notes that secondary treatment technology is not designed for nutrient removal. Nevertheless, the EPA sought out information on incidental removals of nutrients by secondary treatment. Not unexpectedly, however, we found that insufficient data exist to draw any general conclusions about the ability of secondary treatment to remove nutrients.

NRDC's second request is for the EPA to establish new generally applicable technology-based nitrogen and phosphorus (nutrients) limitations as part of the secondary treatment regulations for POTWs. After careful consideration; the EPA is denying this request. We find that a uniform set of nationally applicable, technology-based nutrient limits is not warranted at this time. An effort to set such uniform national limits would require POTWs to incur high costs even where such costs are not necessary to protect water quality. In addition, the record indicates that some POTWs face technical constraints to installing more advanced treatment. Instead of pursuing national rulemaking to establish uniform technology-based requirements, the EPA is effectively pursuing the control of nutrient discharges at POTWs by means of site-specific, water-quality-based permitting. The reasons for this decision are discussed more fully below.

I. The EPA Has Completed a Current Up-To-Date Review of Pollutant Reduction Attainable through the Application of Secondary Treatment

Citing CWA Section 304(d)(1), NRDC first requested that the EPA publish information on the degree of effluent reduction attainable at the present time through the application of secondary treatment for nutrient pollution. In response, the EPA has decided it is advisable at this time to publish updated information on the performance of secondary treatment. Accordingly, the EPA is publishing the "Secondary Treatment Performance Report" (EPA, 2012a).[1] This report summarizes the most current information on the degree of effluent reduction of the conventional pollutants biochemical oxygen demand and total suspended solids attainable by the application of secondary treatment at POTWs. The report gives this information for POTWs with discharge volumes greater than or equal to 10 million gallons per day.

NRDC's petition asks that the EPA specifically publish information on nutrient reductions attainable by secondary treatment technology. The technology that formed the basis for the EPA's secondary treatment regulations, however, is not designed to remove nutrients. Nevertheless, in light of the petition, the EPA did investigate whether there are data on incidental nutrient removals at POTWs that employ secondary treatment technology and only such technology (i.e., without the addition of further, more advanced treatment). We found, however, that very little nutrient removal data exist for such POTWs and we note that such POTWs are not required to report incidental nutrient removal information to the EPA. Where nutrient discharge monitoring data do exist (which is only at about 30 percent of all POTWs), generally it is at facilities that employ not just secondary treatment technology but also more advanced treatment technologies. Consequently, the EPA was unable to draw any general conclusions about incidental nutrient removals at POTWs that employ only secondary treatment technology.

II. Establishment of Nutrient Limits in the Secondary Treatment Standard to Control POTW Nutrient Discharges Is Not Warranted at This Time

The petition also requests that the EPA amend its secondary treatment regulations to establish generally applicable nutrient limits at POTWs. It asserts that the CWA requires the EPA to address POTW pollutant discharges and establish limits achievable by secondary treatment (Pet. at 45). This part of the petition invokes the EPA's authority to establish secondary treatment regulations for POTWs under CWA Section 301(b)(1)(B).[2]

Reducing and eliminating the environmental harm caused by nutrient pollution is one of the EPA's top priorities. The Agency has devoted considerable effort and resources to comprehensively evaluating and addressing nutrients from significant non-point and point sources, including POTWs.
After careful consideration of the information and arguments presented in your petition[3], the EPA has determined that it is not warranted at this time to revise the secondary treatment regulations to establish new effluent limitations for nutrients. As explained further below, we conclude that the need to control

[1] The "Secondary Treatment Performance Report" (EPA, 2012a) will be provided to NRDC early in 2013.
[2] CWA Section 301(b) states that "there shall be achieved . . . (1)(b) for [POTWs]. . . effluent limitations based upon secondary treatment as defined by the Administrator pursuant to Section 304(d)(1)."
[3] EPA has also considered NRDC's follow-up letter of April 21, 2010, and has also considered, among other things, comments on this petition submitted by the National Association of Clean Water Agencies (NACWA) in letters dated February 29, 2008, Sept. 24, 2009, June 8, 2010, and November 9, 2012, and follow up information submittals by NACWA.

nutrients at POTWs is a highly site-specific matter that is not well-suited to being carried out through a uniform national rule; that not all POTWs nationwide need to meet minimum technology-based limits for nutrients to protect water quality; and that many POTWs would incur high costs individually, and POTWs overall would incur annual costs of tens of billions of dollars nationally to meet such uniform technology-based limits. Instead, as a preferred approach, the EPA finds that the water-quality based permitting provisions of the CWA and the EPA's implementing regulations give the EPA and the authorized states the flexibility to decide where POTW nutrient controls are needed, and to establish such controls, as part of comprehensive efforts to address surface water impairment due to excessive levels of nutrients from both POTWs and other sources.

III. Background on Secondary Treatment

The term "secondary treatment" is not defined in the CWA, and the Act therefore gives the EPA broad discretion to define the term. The legislative history shows that Congress intended secondary treatment to serve as a technology floor consisting of removal efficiencies between 50 and 90 percent for organic suspended solids and BOD through biological treatment. The EPA's existing secondary treatment regulations satisfy the CWA's requirements to establish secondary treatment standards because they set numerical limitations on BOD, TSS, and pH. In short, the EPA has broad discretion to determine whether to revise the existing regulatory definition of secondary treatment to establish new nationally applicable effluent limitations for nutrients as NRDC requests. The EPA finds there are a number of factors that are relevant to this determination, as we describe in the following sections.

Historically, sewage treatment processes were grouped together as primary or secondary based on the technology by which pollutant removal was accomplished, as well as the pollutants removed by those technologies. Primary treatment removes pollutants through liquid-solid separation techniques. Secondary treatment employs biological treatment systems to reduce pollutants, particularly degradable organic materials, not effectively removed by primary treatment. In establishing the secondary treatment regulations, the EPA used the approach, consistent with other sections of the CWA pertaining to establishment of technology-based effluent limits, of evaluating performance data from well-designed and operated treatment plants to determine which pollutants would be effectively and consistently reduced. The EPA selected activated sludge treatment, the most common technology at the time for reducing degradable organic materials not effectively removed by primary treatment, as the primary basis for evaluating the removal performance of pollutants typically expected to occur in the influent to POTWs: BOD, ammonia-nitrogen and other forms of nitrogen, phosphorus, and TSS. The EPA determined that only BOD, TSS, and pH could be effectively and consistently reduced and thus required POTWs to remove 85 percent, on a monthly basis, of BOD and TSS, and to maintain an effluent pH between 6.0 and 9.0. The Agency did not specify numeric limits for nitrogen and phosphorous under secondary treatment because it found under normal conditions activated sludge treatment systems do not effectively or consistently remove these pollutants.[4]

POTWs were required to meet secondary treatment requirements, which represented a minimum technology-based standard of treatment, by 1977. We note that the CWA originally also set a further deadline of 1983 for POTWs to meet a higher (or advanced) level of technology-based treatment termed "Best Practicable Waste Treatment Technology. The Act's legislative history shows that Congress expressly envisioned that nutrients were one of the categories of additional constituents that would be

[4] 48 FR 52272, 52273 (Nov. 16, 1983).

addressed by advanced treatment.[5] However, in the Municipal Wastewater Treatment Construction Grants Amendments of 1981, Congress, recognizing the shortfall of federal funding for the construction of facilities, repealed the 1983 deadline for all POTWs to achieve compliance with BPWTT requirements.[6]

IV. Obstacles to Developing a Uniform National Technology-based Standard for Nutrients at POTWs

To be sure, for many POTWs across the country, nutrient removal technologies can and should be installed, even though it may be costly, in order to meet the water-quality based requirements of the CWA.[7] Nevertheless, while this may be the case at various individual POTWs, the EPA finds there are obstacles to developing a uniform technology-based standard for nutrients that would apply to all POTWs nationwide. After close examination of the most current data, the EPA finds that many POTWs would require significant upgrades to their existing technologies designed to meet secondary treatment standards in order to install nutrient removal technologies. Moreover, at certain POTWs, installing nutrient removal technologies would either be technologically difficult (e.g., due to land constraints) or would involve extremely high costs[8].

We also note that the feasibility of replacing current secondary treatment systems to add nutrient removal is highly site-specific, depending on numerous factors unique to each site. These include the current system's size, design, and retention time, the system's age and remaining useful life, whether combined sewer systems are present (which create significantly higher influent flows during periods of high rainfall), the availability and cost of land for any necessary expansion, zoning codes and local land use concerns, and differences in sludge generation and associated dewatering and disposal costs. In addition to the fact that certain upgrades are technologically difficult or are not affordable at many POTWs, the high variability in what each POTW can achieve at its specific location means it would be very challenging to develop a uniform national rule containing one set of requirements.

Current system size is a particularly important factor in determining the cost of upgrading systems designed to meet secondary treatment standards. Small POTWs are generally less technologically

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[5] See H. Rep. No. 92-911, Report of the Committee on Public Works, U.S. House of Representatives, with Additional and Supplemental Views, Federal Water Pollution Control Act Amendments of 1972, at 87-88 (March 11, 1972) ("The term 'best practicable waste treatment technology' covers a range of possible technologies. . . . Particular attention should be given to treatment and disposal techniques which recycle organic matter and nutrients within the ecological cycle. . . . In defining 'best practicable waste treatment technology' for a given case, consideration must be given to new or improved treatment techniques which have been developed and are now considered to be ready for full-scale application. These include . . . phosphorus and nitrogen removal. . . .")

[6] See report of the Senate Committee on Environment and Public Works, Clean Water Act Amendments of 1981, S. Rep. No. 97-204 at 17 (Oct. 7, 1981). In the same legislation, Congress extended the deadline for achieving standards based on secondary treatment to 1988 for certain POTWs.

[7] NRDC said in their April 21, 2010, letter to EPA Office of Water Assistant Administrator Peter Silva that the 2009 EPA report "An Urgent Call to Action: Report of the State-EPA Nutrient Innovations Task Group" (EPA, 2009) suggested that EPA "[c]onsider redefining the secondary treatment requirement for wastewater treatment plants to include nitrogen and phosphorus by adding them to the list of pollutants that require technology-based effluent limits." However, the same report notes that not all POTW permits may need numeric phosphorus and nitrogen limits to address water quality issues.

[8] Feasibility studies conducted for two POTWs in King County, Washington demonstrated the effect that installation of nutrient reduction technologies had on the capacity of the existing facilities. In both instances, new systems were necessary in addition to upgrades to the existing systems to handle the volume of wastewater. At one of the two POTWs, there was no land available on which to build the necessary additional capacity (King County, 2012 and 2011).

sophisticated than large POTWs and thus many would require significant upgrades to remove nutrients at a higher unit cost.[9] Many small POTWs only have basic lagoons and trickling filters to meet secondary treatment requirements. Small POTWs, moreover, have a limited ability to pay for upgrades because they have a small customer base.[10]

If the EPA were to establish new nutrient limitations as part of the secondary treatment standards, they would apply to all POTWs nationally and thus impose technology retrofit or replacement costs regardless of whether their discharges are causing or contributing to water quality problems. Based on recent analysis of costs and efficiencies of nutrient removal technologies, the EPA has determined that retrofitting or replacing secondary treatment technologies at POTWs with a flow of at least 0.5 million gallons per day (MGD)[11] to incorporate advanced nutrient removal would impose costs of from 5 to 12 billion dollars annually (based on a seven percent interest rate) depending on whether facilities could retrofit their current systems or would need to replace them (EPA, 2012b). Not included in this estimate of costs are POTWs with flows of at least 0.5 MGD that have waivers from secondary treatment, use trickling filters or stabilization basins without activated sludge, or that were determined to already have the necessary treatment in place. The POTWs for which the EPA estimated costs represent about 33 percent of all POTWs nationwide but represent nearly 90 percent of the total municipal wastewater treated. The capital investment required to retrofit existing technology is estimated to cost 45 billion dollars. The capital investment required to replace existing technology is estimated to cost 130 billion dollars. Requiring nutrient limits for POTWs of all sizes would result in higher total capital investment costs. On a per gallon basis, it would be more expensive for small POTWs than large POTWs to upgrade to accomplish nutrient reductions because many of the small POTWs would need to replace their current systems. As noted by Symbiont (Symbiont, 2011), smaller POTWs have a proportionately higher cost to achieve nutrient removal, as much as 200 dollars per MGD.

As explained further below, the EPA's decision to deny NRDC's request to add technology-based nutrient limitations to the Agency's secondary treatment standards reflects a reasoned balancing of relevant policy concerns entirely consistent with the intent of Congress, which believed that it would be wasteful of public funds to define secondary treatment in such a way as to require facilities to achieve unnecessary degrees of advanced treatment (U.S. Senate, 1981). The EPA's decision is also consistent with the CWA's legislative history concerning the removal of the deadline for POTWs to meet BPWTT, especially given Congress's express mention that it was under the advanced level of treatment represented by BPWTT that nutrients could be addressed.

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[9] A study conducted for the State of Illinois examined unit costs for upgrading POTWs to remove nutrients. The study determined that the unit cost for installing phosphorus controls varies greatly based on the size of the POTW with a range of more than 200 dollars per MGD between large POTWs (discharge flow of 10 MGD or higher) and small POTWs (discharge flow of 1 MGD or less) (Symbiont, 2011).

[10] It should be noted further that although large POTWs typically have more sophisticated secondary treatment technologies than small POTWs, such as activated sludge treatment, many may not be able to expand due to the availability and cost of adjoining land parcels.

[11] EPA used the CAPDET model (Computer-Assisted Procedure for the Design and Evaluation of Wastewater Treatment Systems) to estimate the costs associated with nutrient treatment (EPA, 2012b). The limitations of the CAPDET model restricted EPA's ability to estimate the costs for POTWs with smaller flows. Moreover, the cost estimates for POTWs with flows of at least 0.5 MGD do not include costs to install nutrient controls at facilities which use trickling filters or stabilization basins which are more prevalent at POTWs with flows less than 1 MGD.

V. The Continuation of the EPA's Water-Quality-Based Approach for Controlling POTW Nutrient Discharges is Warranted

While nutrient pollution does warrant advanced treatment control at some POTWs to protect water quality, it is unnecessary at others. The CWA requires application of effluent limitations for nutrients that are met by using advanced treatment where necessary to meet applicable water quality standards. These limitations are called water quality-based effluent limits or WQBELS (CWA section 301(b)(1)(C); 40 C.F.R. §§ 122.4(d); 122.44(d)(1)(vii)(A); applicable to the states at 40 C.F.R. § 123.25). Specifically, where secondary treatment is insufficient to protect the quality of the receiving waterbody, POTWs must meet any more stringent water quality-based effluent limits derived to achieve water quality standards.

The EPA's long-held view, consistent with the requirements of the CWA, is that given the site-specific variation in technological feasibility and costs of nutrient treatment systems, as well as how aquatic ecosystems respond to nutrient additions, POTW nutrient discharges are best addressed through water-quality-based permitting. There are approximately 16,000 POTWs in the U.S., but only about 4,300 are major dischargers with a flow greater than one million gallons per day. As illustrated by an analysis of discharges into the Chesapeake Bay discussed below, advanced nutrient treatment is not necessary at many smaller POTWs in watersheds where water quality standards can be met in other ways, for example, through a combination of controls on stormwater, agricultural point and nonpoint sources and larger POTWs.

In many areas water quality-based permit limits can prevent or correct nutrient-related impairments more effectively than national technology-based nutrient limits due to site-specific variability of waterbody response to nutrients. The EPA's strategy, articulated in the March 16, 2011 memorandum from Nancy Stoner, the EPA Acting Assistant Administrator for the Office of Water, entitled "Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions" (Framework Memo) (EPA, 2011), envisions a number of different approaches which can be tailored to specific circumstances on a state or watershed-based level through close cooperation among the EPA, states, other federal agencies, and stakeholders. This collaborative watershed approach to nutrient controls is accomplishing substantial nutrient reductions in several notable watersheds such as the Long Island Sound (CTDEP, 2007a) and the Great Lakes (Great Lakes Commission, 2012), as well as in many smaller but no less important watersheds. For instance, approximately 8,000 nutrient-related total maximum daily loads (TMDLs) have been established throughout the United States (EPA, 2012c). A number of states have issued POTW permits with numeric nutrient limits. These states include Connecticut, Rhode Island, New Jersey, Pennsylvania, California, and Washington. In addition, the State of Wisconsin began setting water quality-based permit limits for phosphorus in streams, rivers, and lakes, and issued rules that describe how phosphorus criteria will be implemented through watershed-adaptive management plans. Other progress being made by states to control nutrient discharges includes efforts made by North Carolina, which has required nutrient monitoring for more than 96 percent of permitted flows in the state.

POTW water quality-based permit limits are driving the growing trend in the installation of advanced nutrient treatment systems. As shown in the EPA's 2008 Clean Watersheds Needs Survey, 31 percent of POTWs with discharges greater than 10 MGD had treatment systems to remove nitrogen, or phosphorous, or both (EPA, 2008a). POTWs discharging more than 10 MGD account for 70 percent of

national POTW discharge flow. Based on funding requests, an additional 18 percent of POTWs nationwide anticipate installing nitrogen or phosphorus treatment systems, or both, within the next ten years, resulting in a total of 49 percent of POTWs that will have advanced treatment systems.

VI. Past Petitions to Amend Secondary Treatment Regulations to Establish Effluent Limitations for Nutrients

Prior to NRDC's petition, the EPA received two similar petitions to amend the secondary treatment regulations to include nutrients. The EPA denied both Peter Maier's petition, submitted in 1993, and the Chesapeake Bay Foundation's Petition, submitted in 2003. Today's decision on NRDC's current petition is consistent with the Agency's decisions on both of these past petitions.

Mr. Maier challenged the EPA's denial of his petition in a lawsuit brought before the U.S. Court of Appeals for the Tenth Circuit. The Tenth Circuit upheld the EPA's denial, agreeing with the Agency that the CWA does not require the EPA to establish generally applicable technology-based secondary treatment limitations for all pollutants that might be reduced by secondary treatment. Maier v. EPA, 114 F.3d 1032 (10th Cir. 1997). Rather, the court found that the CWA grants the EPA discretion to determine whether it should set generally applicable technology-based limits for specific pollutants such as nutrients. The Tenth Circuit noted that:

> "We should not order the agency to develop generally-applicable parameters [for nutrients] based on the use of new technology, even if cost effective, in the face of the Agency's reasoned judgement that the use of such technology is irrelevant to the attainment of water quality standards in many circumstances."

The court found, moreover, that the EPA's decision to control POTW nutrient discharges through individual permits rather than by adding nutrient limits to secondary treatment standards was supported by the Agency's reasoned explanation that nutrient effects on water quality are highly variable depending on the characteristics of the receiving water, and that water quality-based nutrient limits protect water quality where necessary.

The EPA denied the Chesapeake Bay Foundation petition requesting establishment of technology-based nitrogen limits as part of the secondary treatment standards for similar reasons. POTW nutrient controls are best determined case-by-case for each receiving water segment, providing a better-tailored site-specific response to water quality issues than uniform technology-based regulations. The EPA reasoned, as it did in its denial of the Maier petition, that technology-based nitrogen limits would impose unnecessary expenses on some POTWs where such controls are not needed to protect water quality. The EPA also noted that the Agency and the states in the Chesapeake Bay watershed were already making significant progress to control POTW discharges through water quality-based permitting. The Chesapeake Bay Foundation did not bring a judicial challenge to the EPA's decision.

VII. NRDC's Suggested Uniform Approach for Establishing POTW Requirements is Not Always Necessary to Protect Water Quality

How POTWs should control nutrients to ensure attainment of water quality standards depends upon a variety of water quality-based factors. The water quality-based permitting approach allows permitting

authorities to take relevant physical, chemical, and biological factors into account to ensure that pollutants from POTWs are controlled so not to cause or contribute to an excursion above water quality standards. For example, when establishing a water quality-based effluent limit, the permit writer may consider information about the waterbody (i.e. the size, type, and ecoregion), nutrient loadings from other point and nonpoint sources, controls on those other sources of nutrients, and ambient nutrient concentrations in receiving water. At this time, the EPA believes a discharger-specific approach to POTW nutrient permitting is better suited for protecting water quality in a particular waterbody or watershed because this approach provides permit limits as stringent as necessary, in combination with controls on other point and nonpoint sources, to protect water quality standards.

VIII. NRDC's Suggested Uniform Approach Would Impose Significant Unnecessary Costs on Many POTWs

The EPA fundamentally disagrees with NRDC's claim that in most cases, minor retrofits to existing POTWs would enable them to cost-effectively reduce nutrient levels in their discharges. (Pet. At 14). Many POTWs in the United States, the majority of which are small systems,[12] would require substantial upgrades at a very high cost to individual POTWs and to POTWs as a whole across the country. The cost estimates for many of the treatment systems discussed in NRDC's petition are based on the incorrect assumption that most POTWs are already using activated sludge systems, nitrification units, filtration processes, or methanol or chemical addition. Although the petition cites examples of POTWs NRDC claims could achieve significant nutrient reduction with only minor modification, upon investigation, the EPA found that most of the facilities cited are already using some type of advanced treatment method in addition to activated sludge systems in order to meet their permit requirements.

Moreover, many smaller POTWs throughout the country are currently conducting secondary treatment with only trickling filters, lagoons, or oxidation ponds. There is a provision in the Act, Section 304(d)(4), that allows these treatment methods, which generally provide lesser treatment than standard activated sludge systems, to be deemed the equivalent of secondary treatment. In order to construct the nutrient removal technologies discussed in NRDC's petition, such small POTWs, which typically have a limited customer base from which to draw funding, in general would have to completely revamp their systems at a very significant cost. The EPA does not believe in general that there are minor, inexpensive modifications to POTWs using trickling filters, lagoons, or oxidation ponds that would allow them to meet the nutrient limits suggested by NRDC, and NRDC offers no examples of what those minor modifications might be.

The EPA conducted an analysis of the costs and efficiencies of various nutrient removal technologies to examine the claims in NRDC's petition. As noted, most of the POTWs cited in NRDC's petition already have treatment that is considered to be advanced treatment and thus cannot be considered examples of the performance of secondary treatment alone. In addition, several of these POTWs have reported design flows that are at least twice the volume of the actual flow. It is much easier for POTWs to retrofit secondary treatment systems with the needed additional treatment steps for nutrient removal if there is excess capacity in the secondary treatment system. Excess capacity is a site specific condition. It is important to note that POTWs located in areas where growth is anticipated may not be able to use excess capacity to retrofit their systems to achieve nutrient removal.

[12] There are approximately 16,000 POTWs in the United States. About 11,700 POTWs, or 73 percent, are classified as "minor" facilities because they have discharge flows of less than 1 million gallons per day.

The EPA has determined that the national cost of retrofitting or replacing secondary treatment technologies at all POTWs to incorporate even the less stringent nutrient limitations advocated in the petition (1.0 mg/L total phosphorus and 8.0 mg/L total nitrogen)[13] would likely exceed 5 billion dollars annually, with a total commensurate capital cost likely to exceed 50 billion dollars based on a seven percent interest rate (EPA, 2012b). These cost estimates have a broad range due to the site-specific nature of upgrade and replacement requirements. There is considerable uncertainty about the exact amount of money required to upgrade POTWs due to a range of site-specific factors such as the age and remaining useful life of treatment systems and components, whether treatment systems could be retrofitted or would have to be replaced, whether combined stormwater systems are present (which create significantly higher influent flows during periods of high rainfall), local differences in electricity costs, availability and cost of land for any necessary facility expansion, differences in amounts of treatment chemicals needed, differences in sludge generation and associated dewatering and disposal costs, and differences in construction loan rates and payback periods. Despite uncertainty about the exact cost, however, the EPA is confident that even at the lower end of the cost estimate range based on conservative assumptions, POTW upgrades to meet NRDC's request would at a minimum require tens of billions of dollars annually.[14]

To support its claim that nutrient treatment is affordable, NRDC also cited a number of studies that provided per capita cost estimates for nutrient treatment ranging from $3.60/year to almost $20/year (Pet. at 35-41.) The EPA's own estimates of per capita costs are higher, finding that these costs range from about $5/year at the low end of the range for retrofit costs to around $63/year at the high end of the range for replacement costs based on a seven percent interest rate (EPA 2012b). In any event, beyond the per capita costs, the EPA finds, as noted, that it is also important to consider the high aggregate costs, estimated in the tens of billions of dollars annually, of a nationwide rule. Given that NRDC's suggested uniform approach for establishing nutrient controls at POTWs is not always necessary to protect water quality, as discussed elsewhere in this letter, the EPA finds that such a uniform approach would impose significant unnecessary costs on many POTWs.

IX. The EPA and Authorized States Continue to Make Significant Progress Controlling POTW Nutrient Discharges through Water Quality-Based Permitting

The significant progress the EPA and authorized States have made controlling POTW nutrient discharges through water quality-based permitting has been fostered through ongoing national regulatory, policy, and information initiatives by the EPA and authorized states to better control nutrients from all sources, including POTWs. State development of numeric nutrient criteria is one such activity resulting from such initiatives. Twenty-five states now have some form of either state-wide or waterbody-specific numeric nutrient criteria (EPA, 2012c). Many of the remaining states have initiated, or plan to begin, processes to develop numeric nutrient criteria.

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[13] NRDC contends that limits of 0.3 milligrams per liter total phosphorus and 3.0 milligrams per liter total nitrogen are consistently attainable using current technology, and that limits of 1.0 milligrams per liter total phosphorus and 8.0 milligrams per liter total nitrogen averaged yearly can be met with existing technology that uses only improved conventional biological treatment processes.

[14] The petition notes that federal funds may be available to defray the cost of achieving nutrient removal. The availability of federal funds, however, is speculative.

The EPA's ongoing support for state efforts to control nutrients is reflected in several key policy directives, including the EPA's 1998 "National Strategy for the Development of Regional Nutrient Criteria," (EPA, 1998) the 2001 national action plan for the establishment of numeric nutrient criteria (EPA, 2001), the 2007 memorandum directing the EPA regional offices to accelerate progress towards the development of numeric nutrient water quality standards (EPA, 2007b), and the March 16, 2011, Framework Memo to the EPA regional offices (EPA, 2011). The Framework Memo synthesizes essential principles that guide Agency technical assistance and collaboration with states, places a strong emphasis on working with states to achieve near-term reductions in nutrient discharges, and emphasizes development of numeric nutrient criteria and effective use of water quality-based permits.

Additionally, for the past several decades the EPA has collaborated with and provided technical support to local, regional, and state regulators in planning and implementing cost-effective advanced treatment projects for POTWs where nutrient removal is necessary. The EPA has recently published three comprehensive assessments of nutrient removal technologies titled "Advanced Wastewater Treatment to Achieve Low Concentration of Phosphorus" (EPA, 2007c), "Municipal Nutrient Removal Technologies Reference Document" (EPA, 2008b), and the "Nutrient Control Design Manual: State of Technology Review Report" (EPA, 2010a). However, as noted, there are existing POTWs that could not implement the technologies discussed in these documents through minor modifications. The cost and technological feasibility of implementation of advanced treatment technologies depends on the site-specific factors discussed above.

One notable example of a comprehensive approach to reducing nutrient discharges is the analysis performed jointly by the EPA, the Chesapeake Bay states, and the District of Columbia (the jurisdictions) to support water quality standards attainment in the Chesapeake Bay. The EPA and the jurisdictions worked collaboratively to set annual loadings caps for nitrogen, phosphorus, and sediment in the Bay and its tidal tributaries through the 2010 Chesapeake Bay TMDL process. The EPA and the jurisdictions, moreover, set nutrient loading allocations for point and nonpoint sources in the Chesapeake Bay watershed in order to meet the loadings caps and attain dissolved oxygen, clarity, and chlorophyll-a water quality criteria in the Bay and its tidal tributaries (EPA, 2010b). State-developed plans to implement the TMDL at the watershed level demonstrate, among other things, the serious and expensive commitments made by communities and states to successfully control POTW nutrient discharges where needed, together with reductions by other point and non-point sources, to achieve the Bay's water quality standards. The analysis of where nutrient controls are needed, performed for these implementation plans, indicates that 420 POTWs responsible for the vast majority of POTW nutrient loadings to the Chesapeake Bay need, and either have or will install, advanced treatment systems. Significantly, it is anticipated that water quality standards will be met in the Chesapeake Bay and its tidal tributaries without requiring approximately 3,300 smaller POTWs in the watershed to bear the expense of installing advanced treatment systems.

As previously mentioned, the EPA's collaborative watershed approach for controlling nutrient discharges has achieved substantial nutrient reductions in several notable watersheds across the United States in addition to the Chesapeake Bay such as the Great Lakes and the Long Island Sound. The Great Lakes, for instance, represents an unprecedented international success in reducing nutrient discharges, accomplished in large part through water quality-based permitting of POTWs. Total phosphorus discharged to the Great Lakes has been reduced below levels specified in the Agreement for Lake

Superior and Lake Michigan, and is at or near the levels needed for Lake Erie and Lake Ontario (Great Lakes Commission, 2012).

Many local governments are confronting difficult financial conditions. Their ability to finance POTW improvements by raising revenues or issuing bonds has declined during the economic downturn and ongoing economic recovery. While technology-based standards serve a foundational role by providing a minimum for dischargers to meet in order to make progress towards achieving water quality standards, raising the technology-based minimum standards for all POTWs may impose unnecessary costs on some municipalities. Given the reduced ability of states, tribes, and municipalities to finance POTW improvements, and given that the EPA already has in place the water quality-based permitting approach available to address POTW nutrient discharges, this is not the appropriate time to revise the definition of secondary treatment in a fundamental way that may impose unnecessary costs on some municipalities.

X. Rulemaking to Establish Technology-Based Nutrient Limits as Part of the Secondary Treatment Standards Is Not Warranted At this Time Given the EPA's Limited Resources and Competing Program Priorities

In considering your request, the EPA has also taken into account its own resource constraints and programmatic priorities. The amount of agency resources in terms of dollars and staff time to undertake rulemaking of this magnitude would be considerable. Such a rulemaking would entail engineering analyses, including site visits and sampling, costing analyses, loading reduction analyses, analyses to statistically derive the limits, benefits analyses and multiple procedural steps to comply with a number of statutes, including not only the Administrative Procedure Act but also the Regulatory Flexibility Act as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA), the Unfunded Mandates Reform Act (UMRA), and a number of Executive Orders. Based on the EPA's experience developing effluent guidelines for industrial categories, the cost of a rulemaking to establish secondary treatment numeric nutrient limits would be at least 10 million dollars (approximately two million dollars annually for five years) plus six full-time employees per year. At the same time, the Agency's budget has not been increasing. It would be very difficult given these budget constraints to undertake this type of rulemaking without a significant shift away from other priorities.

Courts generally recognize the need to allow Agencies to prioritize their own discretionary authorities. See, e.g., Heckler v. Chaney, 470 U.S. 821, 831-32 (1985). In the discussion above, the EPA has explained why a uniform, national technology-based rule to add nutrients to the secondary treatment regulations would not make sense at this time, given technological feasibility and cost issues and given that the EPA is otherwise pursuing a more effective water-quality-based approach to nutrient controls at POTWs. The EPA accordingly finds it is not warranted at this time to divert its limited resources away from competing program priorities in order to pursue the regulatory revisions requested by NRDC.

XI. Conclusion

Based on several decades of experience, and consistent with its past decisions on similar petitions, the EPA concludes that setting uniform, nationwide technology-based nutrient limits is not warranted, for the reasons discussed above. The EPA's preferred strategy, which is in effect across the country, is instead to seek to comprehensively control and manage all major sources of nutrients contributing to water quality impairments in particular watersheds, including POTWs and other significant point and

non-point sources of nutrients, through water quality-based permitting of point source discharges and nonpoint source management measures.

Reducing and eliminating the environmental harm caused by nutrient pollution will continue to be one of the EPA's top priorities. The EPA welcomes further discussions with NRDC and other stakeholders as the Agency continues to build on several decades of accomplishments in comprehensively evaluating and addressing nutrients from all significant non-point and point sources, including POTWs.

Please see the enclosure referencing the documents cited in this letter.

Sincerely,

Michael H. Shapiro
Deputy Assistant Administrator

Enclosure

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Nutrient Reduction Requirements

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In support of the Iowa Nutrient Reduction Strategy you shall prepare and submit a report that evaluates the feasibility and reasonableness of reducing the amounts of nitrogen and phosphorus discharged into surface water. The report shall be submitted no later than *{twenty-four months from the issuance date}* and shall address the following:

- A description of the existing treatment facility with particular emphasis on its capabilities for removing nitrogen and phosphorus. If data are available, the description should include the amounts of total nitrogen (TKN+nitrate+nitrite) and total phosphorus in both the raw wastewater and the final effluent.

- A description and evaluation of operational changes that could be implemented to reduce the amounts of total nitrogen and total phosphorus discharged in the final effluent and the feasibility and reasonableness of each. Your evaluation must discuss the degree of effluent reduction achievable for each operational change. When evaluating feasibility you should consider what, if any, effect operational changes would have on the removal of other pollutants (e.g. $CBOD_5$, TSS). When evaluating reasonableness you should include estimates of the additional cost, if any, to implement such changes.

- A description and evaluation of treatment technologies that would achieve significant reductions in the amounts of total nitrogen and total phosphorus discharged in the final effluent with a goal of achieving annual average mass limits equivalent to concentrations of 10 mg/L total nitrogen and 1 mg/L total phosphorus. For each treatment technology the report should assess its feasibility, reasonableness, practicability, the availability of equipment, capital costs, annual operating costs and any non-water quality environmental impacts (e.g. additional air pollution, increase sludge production).

- Based on the evaluations of operational changes and treatment technologies the report must select the preferred method(s) for reducing total nitrogen and total phosphorus in the final effluent, the rationale for the selected method(s) and an estimate of the effluent quality achievable.

- The report must include a schedule for making operational changes and/or installing treatment technologies to achieve the effluent quality attainable using the selected methods.

DRAFT

DEC 31 2012

VEENSTRA & KIMM, INC.
2800 Fourth Street SW, Suite 9 • Mason City, Iowa 50401-1596
641-421-8008 • 641-380-0313(FAX) • 877-241-8008(WATS)

December 21, 2012

John Lawrence
Nutrient Reduction Strategy
ANR Program Services
2101 Agronomy Hall
Ames, IA 50011-1010

NUTRIENT REDUCTION STRATEGY
BRITT, IOWA

Dear John:

This letter is offered in response to the Nutrient Reduction Strategy set to be implemented on January 4, 2013. The City Council of the City of Britt has requested that Veenstra & Kimm, Inc. prepare this letter on their behalf.

Currently, the City of Britt is permitted to discharge 1.16 MGD for their AWW 30 day flow on their NPDES permit which expired in 2007. As can be seen on the enclosed Table A, the City of Britt's actual average AWW 30 day flow is between 450,000 – 775,000 gallons per day. Please note that the flow for March of 2010 was above 1.0 mgd, however this was an unusual circumstance as temperatures rose rapidly causing all snow to melt in a short amount of time. In addition to the melting snow, approximately half an inch of rain fell further compromising their system. The City of Britt has also made improvements to their sanitary sewer system since that time to reduce I & I.

The City of Britt's Wastewater Treatement Facility was constructed in 1986 and was over designed for anticipated industrial and population growth for the City of Britt. Neither of these areas of growth have occurred since the construction of this facility. In fact, the population has actually decreased since that time.

The City of Britt is requesting to be removed from the Affected Facilities List as their actual AWW 30 day flows fall below the 1.0 MGD threshold. The City of Britt plans to have their facility derated to an AWW 30 day flow of 0.9 MGD.

If you have any questions or comments please contact the undersigned at 1-877-241-8008.

Sincerely,

VEENSTRA & KIMM, INC.

Drew Sweers, E.I.T.
Design Engineer

Enclosures:

cc: Jeanie Purvis, City Clerk, City of Britt
Adam Schnieders, NPDES-Wastewater Operations Permitting, IDNR

drs;V:\VEENSTRA & KIMM\Clients\Municipal\Britt\Promo\Correspondence\John L. Affected Facilities List 122112,wpa

TABLE A
AVERAGE WET WEATHER 30 DAY FLOW, GAL (AWW 30)

	YEAR			
MONTH	**2012**	**2011**	**2010**	**2009**
JAN	104,000	136,000	256,000	148,000
FEB	110,000	287,000	218,000	299,000
MAR	128,000	397,000	1,008,000	579,000
APR	165,000	667,000	586,000	550,000
MAY	181,000	629,000	396,000	278,000
JUN	126,000	561,000	407,000	377,000
JUL	91,000	283,000	422,000	342,000
AUG	101,000	130,000	249,000	190,000
SEPT	95,000	108,000	158,000	154,000
OCT	92,000	106,000	133,000	672,000
NOV		101,000	154,000	538,000
DEC		110,000	139,000	313,000
MARCH - JUNE 4 YEAR AVERAGE				**470,938**

TYPICAL WET WEATHER PERIOD